October 31, 2007

Jim Baldwin
Bureau of Land
Division of Remediation Management
Remedial Project Management Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: **Comprehensive Site Investigation Report**
0311715101 – Cook County
Village of Lyons / Quarry Reclamation District TIF #4
Southwest Corner of Ogden and Lawndale Avenues
Village of Lyons, Illinois
BB&J Project No. 0259004

Dear Mr. Baldwin:

Bradburne, Briller & Johnson, LLC (BB&J), on behalf of Village of Lyons is providing this *Comprehensive Site Investigation Report* (CSIR) for the Lyons Quarry Reclamation District TIF #4 property located at the Southwest Corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property).

If you have any questions regarding this CSIR, please contact our office.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

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Project Manager

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Senior Scientist

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COMPREHENSIVE SITE INVESTIGATION REPORT

Village of Lyons Quarry Reclamation District TIF #4
0311715101 – Cook County
Southwest Corner of Ogden and Lawndale Avenues
Village of Lyons, Illinois

Submitted to:

Illinois Environmental Protection Agency Site Remediation Program
Springfield, Illinois

Prepared by:

BRADBURNE, BRILLER & JOHNSON, LLC
Chicago, Illinois

October 31, 2007

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1
1.1 BB&J's Previous Investigations of the Subject Property 4
1.1.1 Proposed Commercial Development 4
1.1.2 Proposed Community Center 6
1.2 Conclusions 7

2.0 SITE CHARACTERIZATION 8
2.1 Background 8
2.1.1 AE Report 9
2.1.2 45-Day DAI Report and DAI CACR 10
2.1.3 DAI Attachments to CACR 11
2.1.4 DAI CACR Amendment 12
2.1.5 BB&J Phase II ESA: Commercial Development 15
2.1.6 BB&J Phase II ESA: Future Use Evaluation 17
2.1.7 BB&J Phase II ESA: Community Center 18
2.1.8 BB&J Phase I ESA 19
2.2 Site History 20
2.3 Site Description 22
2.3.1 Geology and Physical Setting 22
2.3.2 Ground-Water Observations, Hydraulic Conductivity and Classification 23
2.3.3 Potential Migration Pathways and Exposure Routes 25
2.3.4 Post-Remediation Property Use 27
2.4 Site Base Map 27
2.5 Legal Description 27

3.0 SITE-SPECIFIC SAMPLING PLAN 27
3.1 AE Investigation 27
3.2 DAI Investigations 28
3.3 BB&J Investigations 28
3.3.1 BB&J Phase II ESA: Commercial Development 28
3.3.2 BB&J Phase II ESA: Future Use 29
3.3.3 BB&J Phase II ESA: Community Center 30

4.0 DOCUMENTATION OF FIELD ACTIVITIES 30
4.1 AE Investigation 30
4.2 DAI Investigations 31
4.2.1 DAI Phase II ESA 32
4.2.2 DAI Attachments to CACR 32
4.2.3 Additional DAI Investigation 33
4.3 BB&J Phase II ESAs 34
4.3.1 BB&J Phase II ESA: Commercial Development 34
4.3.1.1 Subsurface Soil Investigation 34
4.3.1.2 Ground-Water Investigation 36
4.3.1.3 Quality Assurance / Quality Control (QA/QC) 36
4.3.2 BB&J Phase II ESA: Future Use 36
4.3.2.1 Subsurface Soil Investigation 37

4.3.2.2 QA/QC 37
4.3.3 BB&J Phase II ESA: Community Center 38
4.3.3.1 Subsurface Soil Investigation 38
4.3.3.2 Ground-Water Investigation 39
4.3.3.3 QA/QC 40

5.0 ENDANGERMENT ASSESSMENT 41
5.1 Discussion of Analytical Results 41
5.1.1 BB&J Phase II ESA: Commercial Development 41
5.1.2 BB&J Phase II ESA: Future Use 42
5.1.3 BB&J Phase II ESA: Community Center 43
5.2 Identified Recognized Environmental Conditions 44
5.2.1 Exposure Routes 45
5.3 De Minimis Conditions 47
5.3.1 Exposure Routes 47
5.4 Nature, Concentration and Extent of COCs 48
5.5 Physical Features of the Subject Property Affecting Potential COC Migration 48
5.6 COC Comparison with IEPA Tier 1 Industrial/Commercial Remediation Objectives or Applicable Background Levels 49

6.0 CONCLUSIONS 49

7.0 STATEMENT OF LICENSED PROFESSIONAL ENGINEER

TABLES

Table 1 Summary of AE Report Soil Laboratory Analytical Results
Table 2 Summary of DAI Phase II ESA Soil Laboratory Analytical Results
Table 3 Summary of DAI Additional Phase II ESA Soil Laboratory Analytical Results
Table 4 Summary of DAI Additional Phase II ESA Ground-Water Laboratory Analytical Results
Table 5 Summary of DAI Adjoining Property Phase II ESA Soil Laboratory Analytical Results
Table 6 Summary of BB&J Phase II ESA: Commercial Development Soil Laboratory Analytical Results
Table 7 Summary of BB&J Phase II ESA: Commercial Development Ground-Water Laboratory Analytical Results
Table 8 Summary of BB&J Phase II ESA: Future Use Soil Laboratory Analytical Results
Table 9 Summary of BB&J Phase II ESA: Community Center Soil Laboratory Analytical Results
Table 10 Summary of BB&J Phase II ESA: Community Center Ground-Water Analytical Results

FIGURES

Figure 1 Site Location Map
Figure 2 Site Base Map
Figure 3 Proposed Site Layout

TABLE OF CONTENTS (Continued)

Figure 4 DAI Phase II ESAs Soil Boring Locations
Figure 5 BB&J Phase II ESA: Commercial Development Soil Boring and Monitoring Well Locations
Figure 6 BB&J Phase II ESA: Future Use Soil Probe Locations
Figure 7 BB&J Phase II ESA: Community Center Soil Boring and Monitoring Well Locations
Figure 8 BB&J Phase II ESA: Commercial Development Potentiometric Map
Figure 9 BB&J Phase II ESA: Community Development Potentiometric Map

APPENDICES

Appendix A IEPA SRP Form (DRM-2)
Appendix B Land Title Survey and Legal Description
Appendix C BB&J Field Procedures
Appendix D *Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc., for Palumbo Bros., Inc., dated December 7, 1993
Appendix E *45-Day Report, Materials Service Corporation Yard 18, Illinois Environmental Management Agency Incident No. 951401*, prepared by DAI Environmental Inc. for MSC, dated January 29 1996 and *Corrective Action Completion Report, MSC – Yard 18 Ogden and Lawndale Site, IEMA Incident No. 951401*, prepared by DAI for MSC, dated March 10, 1998
Appendix F *Attachments to Site Classification Completion Report / CACR, Lyons / MSC, 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI for MSC, dated July 29, 1999
Appendix G CACR *Amendment, LPC# 0311715020 – Cook County, MSC – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, LUST Incident# 951401*, prepared by DAI for MSC, dated February 4, 2004
Appendix H *Report of Phase II Environmental Site Assessment, Strategy and Sampling – Commercial Development*, prepared by BB&J, for the Village of Lyons, dated June 13, 2007
Appendix I *Report of Phase II Environmental Site Assessment, Future Use Evaluation*, prepared by BB&J, for Village of Lyons, dated June 13, 2007
Appendix J *Report of Phase II Environmental Site Assessment: Strategy and Sampling – Community Center*, prepared by BB&J, for the Village of Lyons, dated June 26, 2007
Appendix K *Report of Phase I Environmental Site Assessment*, prepared by BB&J, dated October 15, 2007
Appendix L Summary of Previous Soil Gas and Flux Chamber Surveys

1.0 EXECUTIVE SUMMARY

This Executive Summary has been prepared consistent with the requirements described in Title 35, Section 740.425(b)(1) of the Illinois Administrative Code (IAC) and includes a discussion of the project objective, technical approach, presence of potential on site Recognized Environmental Conditions (RECs), and data limitations associated with this Comprehensive Site Investigation Report (Comprehensive SIR).

The objective of the Comprehensive SIR was to address on site potential RECs in accordance with the Illinois Environmental Protection Agency (IEPA) Site Remediation Program (SRP) regulations detailed in Title 35 IAC 740 and to supplement the information collected during previous environmental site assessments (ESA) performed by Bradburne, Briller & Johnson (BB&J).

The technical approach used to meet the objective of this project was provided to the Village of Lyons, Illinois c/o Robert Bush of Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C. (Ancel Glink) in a *Proposal for Additional Consulting Services* (Proposal), dated July 10, 2007. The scope of work was performed consistent with the requirements for a Comprehensive SIR (Title 35 IAC 740.420) and incorporated data previously collected. The scope of work is outlined in the Site-Specific Sampling Plan included herein.

The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a former clean construction and demolition debris (CCDD) fill operation (Former CCDD Fill Operation) located within a Former Quarry (Former Quarry) at the Subject Property. The far western portion of the Subject Property is graded down toward the existing quarry on the western adjoining property (Existing Quarry). Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue that is currently operated by Material Services Corporation (MSC), former operator of the Former CCDD Fill Operation and owner of the Subject Property, and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fuel station at the corner of Ogden and Lawndale Avenues. Reliable Materials Lyons, LLC (Reliable), operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD also located on the west adjoining property. A Site Base Map and a Site and Vicinity Map are provided as Figures 1 and 2, respectively.

The Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows:

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the former quarried portion of the Subject Property;
- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,

- A community center in the southeast portion of the Subject Property, consisting of an approximately 43,000square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be southeast of the former quarried of the Subject Property.

Based on historical records research, the Subject Property consisted of undeveloped property in 1901. Since the 1930s, the Subject Property has consisted of three main areas: a Former Quarry located in the central and western portions of the Subject Property, several structures located in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues, and several MSC buildings and associated parking lots located in the southeast portion of the Subject Property. More specifically:

Former Quarry / Former CCDD Fill Operation Area

From at least 1939 to 1953, the central and western portions of the Subject Property consisted of a limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. The land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff gray and brown clay and clay fill. Pockets of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet below ground surface (bgs). Additionally, occasional pockets of ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs.

From the early 1980s to 1995 an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the Former Quarry. In 1993, a leak in an underground pipe that connected to a diesel aboveground storage tank (AST) at the Palumbo facility was detected and was designated as Illinois Emergency Management Agency (IEMA) Incident Number 931154. Approximately 100 gallons of diesel fuel were released into the subsurface. An investigation indicated that the diesel fuel migrated to the Existing Quarry wall at the western adjoining property. Approximately 50 cubic yards of petroleum-impacted soil was removed from the asphalt plant at the Subject Property; however, a No Further Remediation (NFR) letter was never issued for the release. According to the Alpha Environmental Report, concentrations of benzene and several polynulcear aromatic hydrocarbons (PAHs) in soil samples collected from the excavation exceeded IEPA Tiered Approach to Corrective Action Objectives (TACO) Tier 1 soil remediation objectives (ROs) for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene

exceeded ROs for the construction worker inhalation exposure pathway. The former asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as parts of the central portion of the Subject Property, was used as a staging area for CCDD for filling the Existing Quarry by Reliable Lyons, LLC (Reliable). In addition, based upon records reviewed from the Illinois Office of the State Fire Marshall (OSFM), one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the former asphalt plant. The gasoline UST was installed in September 1987 and based upon historic maps of the area, was located directly west of the asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

In addition, there was a pond (Former Pond) located along the former eastern edge of the quarry near the north-central portion of the Subject Property from approximately 1980 to 2006. The pond was filled since 2006, and presently is a level, vacant area.

Northeast Area of Subject Property

There have been several structures on approximately 0.37-acre tract at the northeast of the Subject Property, at the corner of Ogden and Lawndale Avenues. In 1939, this tract was occupied by an apparent residential building. From 1951 to 1980, an apparent fuel station was located at this area. From 1988 to the present, this tract has been vacant. According to information obtained from the Illinois Office of the State Fire Marshal (OSFM), five gasoline USTs, operated by MSC, were installed for the fuel station in 1957 and removed in 1995. During the removal of the USTs, a release of gasoline was documented (IEMA Incident Number 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fuel station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fuel station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a No Further Remediation (NFR) letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

MSC Buildings in Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. Currently, the north MSC warehouse building is no longer present. Additionally, a portion of the other MSC

building located on the Subject Property and along Lawndale Avenue has been razed for redevelopment activities associated with the proposed community center.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD Fill Operation on the western adjoining property was acquired by Reliable.

1.1 BB&J's Previous Investigations of the Subject Property

From February to June 2007, BB&J has sampled the soil, ground water, and soil gas at the Subject Property in conjunction with geotechnical investigations for the redevelopment of the Subject Property. The specific locations of the samples were largely dependent upon the location of the geotechnical borings as BB&J used the geotechnical investigations as a means to preliminarily identify potential constituents of concern (COCs) at the Subject Property. More specifically, BB&J has collected eighteen soil samples ranging in depth from near the ground surface to 60 feet below ground surface (bgs) and four ground-water samples from the proposed commercial development in the north portion of the Subject Property. BB&J has also collected seventeen soil samples ranging from the surface to 15 feet bgs and three ground-water samples from the area of the proposed community center in the southeast portion of the Subject Property. No soil or ground-water samples have yet to be collected from the proposed recreational use area in the central portion of the Subject Property.

All of the soil samples and ground-water samples collected at the Subject Property were submitted to a laboratory for analysis of the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260B;
- Semivolatile organic compounds (SVOCs) by USEPA Method 8270C;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082;
- Resource Conservation and Recovery Act (RCRA) metals by USEPA Method 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8081A; and,
- pH by USEPA Methods 9040B/9045C.

Below are the constituents that were identified in soil and ground-water samples during BB&J's investigations in the proposed use areas of the Subject Property above the following IEPA TACO Tier 1 ROs.

1.1.1 Proposed Commercial Development[1]

The following constituents were identified in the soil samples above the following IEPA TACO Tier 1 commercial-industrial soil ROs in the north portion of the Subject Property:

[1] Investigations at the proposed commercial development at the Subject Property also bordered the area of the northern edge of the Former Quarry / Former CCDD Fill Operation.

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(a)pyrene {SB-3 (3.5 – 5 feet bgs)], [SB-5 vicinity (0 – 1 feet bgs)], [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs);
- Indeno(1,2,23-cd)pyrene [SB-7 (6 – 7.5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Inhalation Exposure Route for Industrial-Commercial Property

- Naphthalene [SB-7 (58.5 – 60 feet bgs)].

Soil Ingestion Exposure Route for Construction Worker for Industrial-Commercial Property

- Benzo(a)pyrene [SB-7 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Total xylenes [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Naphthalene [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Mercury [SB-3 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzene [SB-7 (6 – 7.5 feet bgs)];
- Vinyl chloride [SB-3 (3.5 – 5 feet bgs)];
- Benzo(a)pyrene [(SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Indeno(1,2,3-cd)pyrene [SB-7 (6 – 7.5 feet bgs)];
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

The following constituents were identified in the ground-water samples above the following IEPA TACO Tier 1 commercial-industrial ground-water ROs:

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Cadmium (MW-5[2]); and,
- Lead (MW-10), (MW-12).

1.1.2 Proposed Community Center[3]

The following constituents were identified in the soil samples above the following IEPA TACO Tier 1 commercial-industrial soil ROs in the southeast portion of the Subject Property:

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [CCSB-32[4] (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [GP-1 (0 – 2 feet bgs)]; and,
- Arsenic [CCSB-34 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Naphthalene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [CCSB-35 (1 –5)] feet bgs, [CCSB-36 (13.5 – 15 feet bgs)]; and,
- Mercury [CCSB-32 (3.5 – 5 feet bgs)], [GP-1 (0 – 2 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene [GP-1 (0 – 2 feet bgs)];
- Carbazole [GP-1 (0 – 2 feet bgs)];
- TCE [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Lead [CCSB-32 (3.5 – 5 feet bgs)].

The following constituents were identified in the ground-water samples above the following IEPA TACO Tier 1 commercial-industrial ground-water ROs:

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene (CCMW-36);
- Benzo(a)pyrene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36); and,
- Vinyl chloride (CCMW-32).

[2] The abbreviation MW was used to denote monitoring well.
[3] Investigations at the proposed community center at the Subject Property also bordered the area of the southern edge of the Former Quarry / CCDD Fill Operation.
[4] The abbreviation CCSB was used to denote community center soil boring.

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Vinyl chloride (CCMW-32).

1.2 Conclusions

The Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows (Figure 3):

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the former quarried portion of the Subject Property;
- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,
- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be southeast of the former quarried portion of the Subject Property.

As such,

- The proposed commercial buildings and asphalt parking lots in the commercial development will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil;
- The proposed recreational use and green space areas will be covered with a compacted clay cap that will act as an engineered barrier to eliminate both the ingestion and inhalation exposure pathways. However, current modeling suggests that no inhalation risk exists in outdoor areas at the Subject Property; and,
- The proposed community center building and asphalt parking lots in the southeast portion of the Subject Property will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil. In addition, a vapor barrier membrane and passive vent system beneath the proposed community center is planned at this time. Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons". Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

However, BB&J also recommends additional sampling of the soil and ground-water to further define the subsurface condition of the Subject Property in the following areas:

- Historical Asphalt Plant Area and Underground Diesel Pipe Release located in the west portion of the Subject Property and within the former filled-in quarry;
- Former Quarry, Former CCDD Fill Operation, and Former Pond located in the central, western, and northern portions of the Subject Property; and,
- Areas of proposed landscaped areas and utility conduits.

BB&J will submit a Conceptual Work Plan to the IEPA SRP to address these additional sampling requirements. Nevertheless, due to the proposed engineered barriers at the Subject Property, it is BB&J's opinion that subsurface investigations beyond those recommended in the Conceptual Work Plan are not required.

2.0 SITE CHARACTERIZATION

The Illinois Environmental Protection Agency (IEPA) Site Remediation Program (SRP) Form (DRM-2) is included in Appendix A.

The following section provides a summary of the investigations that have performed at the Lyons Quarry Reclamation District TIF #4 property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). A Site Base Map and a Site and Vicinity Map are provided as Figures 1 and 2, respectively. A copy of the Land Title Survey and Legal Description is included in Appendix B. BB&J's field procedures are summarized in Attachment C.

2.1 Background

Previous environmental investigations were performed at the Subject Property prior to enrollment into the IEPA SRP, including:

- *Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc. (AE), for Palumbo Bros., Inc., dated December 7, 1993 (AE Report) (See Appendix D);
- *45-Day Report, Materials Service Corporation (MSC) Yard 18, Illinois Environmental Management Agency (IEMA) Incident No. 951401*, prepared by DAI Environmental Inc. (DAI) for MSC, dated January 29 1996 (DAI 45-Day Report) and *Corrective Action Completion Report* (CACR), *MSC – Yard 18 Ogden and Lawndale Site, IEMA Incident No. 951401*, prepared by DAI for MSC, dated March 10, 1998 (DAI CACR) (See Appendix E);
- *Attachments to Site Classification Completion Report / CACR, Lyons / MSC, 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI for MSC, dated July 29, 1999 (DAI Attachments to CACR) (See Appendix F);
- CACR *Amendment, LPC# 0311715020 – Cook County, MSC – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, LUST Incident# 951401*, prepared by DAI for MSC, dated February 4, 2004 (DAI CACR Amendment) (See Appendix G);
- *Report of Phase II Environmental Site Assessment, Strategy and Sampling – Commercial Development*, prepared by BB&J, for the Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Commercial Development) (See Appendix H);

- *Report of Phase II Environmental Site Assessment, Future Use Evaluation*, prepared by BB&J, for Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Future Use) (See Appendix I);
- *Report of Phase II Environmental Site Assessment: Strategy and Sampling – Community Center*, prepared by BB&J, for the Village of Lyons, dated June 26, 2007 (BB&J Phase II ESA: Community Center) (See Appendix J); and,
- *Report of Phase I Environmental Site Assessment*, prepared by BB&J, dated September 25, 2007 (BB&J Phase I ESA) (See Appendix K).

Below are summaries of these investigations and ESAs.

2.1.1 AE Report

The AE Report addressed the work performed in response to a diesel release from an underground pipe connected to a diesel AST at the former asphalt plant operations, operated by Palumbo Bros. Inc. [(Palumbo), parent company of Orange Crush Recycle, Co.], on the west portion of the Subject Property. MSC owned the property the asphalt plant occupied during the date of the AE Report.

The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the Existing Quarry on the west adjoining property, reported "organic material" visible from a single seep along a roadway leading into the Existing Quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the "organic material" along the roadway. Based on the assumption that the diesel loss and the visible "organic material" were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident Number 931154).

A site reconnaissance of the former asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2 inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of 5 to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a laboratory for analysis of total petroleum hydrocarbons (TPH) for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel.

Upon confirmation that the material in the Existing Quarry matched the diesel fuel in the diesel AST, soil was excavated from around a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of BTEX and PAHs on May 21, 1993. According to the AE Report, the concentrations of BTEX and PAHs exceeded IEPA Tier 1 soil ROs. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for

the construction worker inhalation exposure pathway (Table 1). One benzene concentration exceeded the Class I soil component of the ground-water ingestion exposure route; however, due to Village of Lyons Ordinance No. 5-18-99-3 which prohibits the use of potable wells, this exceedance was not considered by BB&J. Additionally, a concentration of benzo(a)pyrene exceeded the commercial-industrial ingestion exposure route, but did not exceed the Metropolitan background standards for Metropolitan Areas as indicated in Title 35 IAC 742, Appendix A, Table H.

Based upon the review of "historic information, anecdotal interviews, and physical observations," AE concluded the Palumbo asphalt plant was located within the filled-in area of the Former Quarry, and as such, AE determined that a "conventional subsurface investigation and ground-water recovery system for this site are not considered feasible." AE proposed quarterly sampling of the recovery trench near the seep along the sidewall of the quarry roadway to monitor concentrations of diesel fuel. Upon two consecutive quarters where the water quality no longer contained detectable concentrations of diesel fuel, AE stated they would prepare a report documenting the sampling activities and request that the IEPA consider the IEMA Incident closed. However, no further documentation regarding additional sampling was provided within the AE Report. Further, the IEMA Incident Number 931154 remains open as of the date of this SIR (See Appendix D).

2.1.2 45-Day DAI Report and DAI CACR

According to the 45-Day DAI Report, DAI CACR, and attachments therein, five USTs were removed on June 27, 1995 from the former fuel station located at the intersection of Ogden and Lawndale Avenues in the northeast portion of the Subject Property. This property consists of approximately 0.368 acres and was not located within the boundaries of the Former Quarry / Former CCDD Fill Operation. The table below summarizes the UST information reviewed by BB&J from the 45-Day Report and DAI CACR:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported IEMA Incident	IEMA Incident No.	On site / Off site
MSC18-3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	Off site
MSC18-7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	On site

It should be noted that UST ID Number MSC18-6, also referred to as the UST located at the Haffner site in the 45-Day DAI Report and DAI CACR, is not located at the Subject Property. Rather, the location of this UST is approximately 1/2 mile to the southwest near the intersection of 44th Place and Riverside Avenue. It appears that this UST is included within the 45-Day DAI Report and CACR and given the same Incident No. as the on site USTs because the USTs were removed by the same company, Waterways Transportation Services, on consecutive days and both locations of USTs had observed releases.

Prior to removal of the on site former fuel station USTs, eleven soil borings were drilled in the area of the USTs on March 14, 1995 to determine the extent of the upcoming excavation around the USTs. A total of nine soil samples from nine soil borings were submitted for laboratory analysis of BTEX and PAHs. Sampling methodology and depths of the soil samples were not described or recorded within the 45-Day DAI Report or DAI CACR or on the laboratory chain of custody. Several soil samples had concentrations of BTEX and PAHs above the IEPA TACO Tier 1 residential soil ROs for the soil inhalation and soil ingestion exposure routes (See Figure 4 and Table 2).

As noted above, a release (Incident Number 951401) was observed during the removal of the USTs at the Subject Property on June 27, 1995. Approximately 330 cubic yards of petroleum-impacted soil and backfill were removed the UST excavations in the central portion of the former fuel station and disposed off site. Additionally, no free product was observed. The DAI CACR requested a No Further Remediation (NFR) letter for the Subject Property based on institutional controls (Village of Lyons, IL ground-water ordinance No. 5-18-99-3) and installation of an engineered barrier consisting of 3 feet of clean top soil, presumably above the soil samples that were collected at the former fuel station during the subsurface investigation (See Appendix E).

2.1.3 DAI Attachments to CACR

According to the DAI Attachments to CACR, the IEPA rejected DAI's request for the NFR letter on "the basis that the extent of soil and ground-water contamination has not been fully investigated/delineated." A *Site Classification WorkPlan*, prepared by DAI, and dated August 3, 1998 (DAI 1998 Workplan), was submitted to the IEPA per the IEPA's request for further investigation. The IEPA approved the DAI 1998 Workplan on December 2, 1998 pending four modifications. The four modifications were not described within the DAI Attachments to CACR.

In February and May 1999, fifteen soil borings were drilled at the former fuel station property for the collection of soil samples to further delineate the petroleum impacts (See Table 5). Soil borings were installed to a depth of approximately 10 feet bgs where bedrock was encountered. The soil samples were submitted for one or more of the following:

- VOCs;
- PAHs,
- Total organic carbon (TOC);
- Toxicity characteristic leachate procedure (TCLP) lead;
- Lead;
- Paint filter and flashpoint; and,
- pH

During this investigation, the results of the analytical results were compared to Tier 1 soil ROs for industrial/commercial property (See Table 3). According to the DAI Attachments to CACR, DAI only considered exceedances of the soil ROs as follows: "soil ingestion exposure pathway for vadose zone soil contamination within 3 feet bgs and the soil inhalation exposure pathway is only a consideration for vadose zone soil contamination within 10 feet bgs." Following this approach, concentrations of benzene exceeded the RO for the inhalation exposure route in soil samples collected within 10 feet bgs in an area along Ogden Avenue on the north and west portions of the former fuel station property. Additionally, concentrations of PAHs exceeded the ROs for the ingestion exposure route in soil samples within 3 feet bgs in an area along Lawndale Avenue on the east portion of the property and along Ogden Avenue on

the northwest portion of the property. The DAI Attachments to CACR proposed installing two asphalt caps in these two areas to serve as engineered barriers to the subsurface to eliminate those exposure pathways.

In addition, one soil sample collected from the southeast portion of the former fuel station property exceeded the Tier 1 RO for TCLP lead; however, the DAI Attachments to CACR stated that the concentrations of lead and TCLP lead in the other analyzed soil samples were at or below background concentrations near the potential source areas (i.e., the former USTs). Further, DAI determined that the TCLP lead concentration did not exceed the Tier 1 RO when using the TACO R26 calculation to determine the modeled concentration at the downgradient Village of Lyons municipal boundary.

Four of the soil borings, at the north, south, east, and west corners of the Subject Property were converted into permanent monitoring wells for collection of ground-water samples. The well at the south corner did not have enough water to obtain samples for analysis. Ground-water samples were collected from the other three monitoring wells and submitted for laboratory analysis of the following:

- BTEX;
- PAHs; and,
- Lead.

Only one of the three ground-water samples, from the west corner of the former fuel station property, exceeded the Tier 1 ground-water RO for one of the analytes (lead). However, the concentration did not exceed the DAI proposed Tier 2 ground-water RO developed using the TACO R26 calculation. In addition, DAI also determined the hydraulic gradient was to the west-southwest with a hydraulic conductivity ranging from 5 to 6.5 centimeters per day (cm/d) (See Table 4).

According to the DAI Attachments to CACR, based upon the findings during this investigation and the previous investigations, DAI requested a NFR letter based upon the following:

- The ground-water exposure route and the soil component of the ground-water ingestion pathway "should be excluded due to the Village of Lyons ground-water ordinance (No. 5-18-99-3)";
- "Ground-water contamination and residual soil contamination migrating from soil to ground-water will have attenuated below levels below the Tier 1 ground-water ROs before encountering the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling"; and,
- The remaining "contamination above Tier 1 industrial/commercial soil ROs for the soil inhalation and ingestion exposure pathways will be covered by an engineered barrier" (See Appendix F).

2.1.4 DAI CACR Amendment

As summarized in the DAI CACR Amendment, the DAI Attachments to CACR for the former fuel station property was denied by the IEPA in a letter dated January 27, 2000 for the following six reasons:

- *"The extent of benzene contaminated soils in excess of Tier 1 ROs was not defined beyond the property boundary north of SB-9. The extent must be defined…"*

- *"The report* (DAI Attachments to CACR) *indicated only gasoline is the material that was released at the Ogden and Lawndale site. Therefore, the only indicator contaminants required to be addressed are BTEX..."*
- *"As a result of Item 2 above, the areas to be covered by an engineered barrier need to be re-evaluated. It appears the area in the vicinity of SB-6 located along the eastern edge of the property adjacent to Lawndale Avenue will not require an engineered barrier…"*
- *"The IEPA disapproves of the input parameters used to perform Equation R26. Specifically, there was no demonstration made to determine how far the contamination plume will extend onto off site properties…Since no information was provided for the ground-water mixing zone thickness, the default value for 200 cm should have been used..."*
- *"The IEPA will determine if the ground-water ordinance for the Village of Lyons will satisfy the requirements to be used as an acceptable institutional control..."*
- *The IEPA has not received a High Priority Corrective Action Plan and associated budget. This information may be submitted separately or concurrently with the High Priority Corrective Action Completion Report.*

According to the DAI CACR Amendment, in response to the IEPA's letter, DAI completed a High Priority CAP and Budget dated March 7, 2002. Briefly, below are highlights from this response:

- Upon obtaining approval from the Illinois Department of Transportation (IDOT), DAI drilled four soil borings to bedrock (approximately 10.5 feet bgs) within Ogden and Lawndale Avenues north of the former fuel station. Two soil samples were collected from three of the soil borings at depths of 3 to 5 feet bgs and 5 to 7 feet bgs, while the soil samples collected from the other soil boring were at depths of 5 to 7 feet bgs and 7 to 9 feet bgs. Soil samples were submitted for laboratory analysis of BTEX and PAHs. None of the soil samples contained concentrations of BTEX or PAHs above the most stringent Tier 1 residential soil ROs. DAI concluded that the "extent of off site petroleum contamination can be estimated by extrapolation between direct measurements" (See Table 5);
- DAI stated that during conversations with IEPA and MSC, the former USTs at the former fuel station property stored both gasoline and diesel fuel. Therefore, BTEX, PAHs, and lead were considered appropriate indicator compounds and "MSC is responsible for evaluating and performing corrective actions for BTEX, PNA, and lead contamination from LUST Incident No. 951401";
- DAI indicated that because PAHs are the appropriate indicator compounds due to diesel fuel used in the USTs, the engineered barriers would be necessary to mitigate the soil ingestion and inhalation exposure pathways for the exceedances of PAHs in those areas; and,
- DAI stated the parameters for the R26 calculation would be revised in the DAI CACR Amendment.

As indicated in the DAI CACR Amendment, the IEPA approved the CAP on July 25, 2002 with five comments which DAI addressed in the DAI CACR Amendment, including:

- *"A revised CACR…should contain the following information: a) the revised R26 calculations demonstrating that contaminated groundwater does not extend across Ogden or Lawndale*

Avenues….b) ground-water flow diagrams…c) Highway Authority Agreements for Ogden and Lawndale Avenues…and, d) demonstration that an asphalt cover (the proposed engineered barrier) has been placed over the areas depicted in the Figure 9 of the July 29, 1999 report."

DAI completed the R26 calculations which showed the concentrations of BTEX and PAHs in question would attenuate to concentrations below Tier 1 Class II ground-water ROs and soil ingestion and inhalation ROs before crossing Ogden or Lawndale Avenues. Appendices within the DAI CACR Amendment also included: 1) the requested ground-water flow diagram, 2) the requested Highway Authority Agreement with IDOT allowing for ground-water and soil impacts under Ogden and Lawndale Avenues to remain in place, and 3) requested locations and photographs from August 27, 2003, of the two asphalt barriers installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways.

- *"No additional soil or ground-water samples should be collected at this time."*

  DAI stated no additional soil or ground-water samples were collected.

- *"IEPA is satisfied that all soil contamination does not migrate across Ogden and Lawndale Avenue, though a Highway Authority Agreement developed in accordance with 35 IAC 742.1020 with the highway authority over these roadways should still be developed for IEPA review and approval."*

  As noted above, DAI included as an appendix in the DAI CACR Amendment a copy of the Highway Authority Agreement with IDOT allowing for ground-water and soil beneath Ogden and Lawndale Avenues to be left in place.

- *"The ground-water ordinance enacted by the Village of Lyons has been approved by IEPA for use as an institutional control to address the ground-water ingestion exposure route."*

  DAI indicated that the CACR will rely upon the IEPA-approved ground-water use prohibition enacted by the Village of Lyons.

- *"It does not appear as though the lead is a COC. In addition, it does not appear as though the lead detected at location SB-14* (in the southeast portion of the property) *is the result of a release from the USTs."*

  DAI agreed that lead should not be considered a COC.

Further, DAI requested a NFR letter based upon the following recommendations previously submitted:

- The ground-water exposure route and the soil component of the ground-water ingestion pathway "should be excluded due to the Village of Lyons ground-water ordinance (No. 5-18-99-3)";
- "Ground-water contamination and residual soil contamination migrating from soil to ground-water will have attenuated below levels below the Tier 1 ground-water ROs before encountering the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling"; and,
- The remaining "contamination above Tier 1 industrial/commercial soil ROs for the soil inhalation and ingestion exposure pathways has been covered by an engineered barrier".

Subsequent documentation from the IEPA indicated that the IEPA issued the NFR letter on February 16, 2006 for the IEMA Incident No. 951401 at the former fuel station on the northeast portion of the Subject Property, in conjunction with the leaking diesel UST (Haffner site) located approximately 1/2 mile

southwest of the former fuel station near the intersection of 44th Place and Riverside Avenue. The NFR letter was recorded on title on May 11, 2006 (see Appendix G).

2.1.5 BB&J Phase II ESA: Commercial Development

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J in the BB&J Preliminary Soil Gas Investigation which is discussed in Appendix L; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted near the north edge of the Former Quarry / Former CCDD Fill Operation. The report indicated that BB&J collected eighteen soil samples ranging from the surface to 60 feet bgs from twelve geotechnical borings, four ground-water samples from four permanent monitoring wells, and three soil gas samples from five feet bgs (see Figure 5). The soil gas survey is not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L. The 12 geotechnical borings, and the subsequent four monitoring wells, were advanced to bedrock in each location. The geotechnical borings ranged from approximately 5 to 60 feet bgs.

Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses) (see Table 6):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(a)pyrene {SB-3 (3.5 – 5 feet bgs)], [SB-5 vicinity (0 – 1 feet bgs)], [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs);
- Indeno(1,2,23-cd)pyrene [SB-7 (6 – 7.5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Inhalation Exposure Route for Industrial-Commercial Property

- Naphthalene [SB-7 (58.5 – 60 feet bgs)].

Soil Ingestion Exposure Route for Construction Worker for Industrial-Commercial Property

- Benzo(a)pyrene [SB-7 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Total xylenes [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Naphthalene [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Mercury [SB-3 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzene [SB-7 (6 – 7.5 feet bgs)];
- Vinyl chloride [SB-3 (3.5 – 5 feet bgs)];
- Benzo(a)pyrene [(SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Indeno(1,2,3-cd)pyrene [SB-7 (6 – 7.5 feet bgs)];
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' Memorandum of Understanding (MOU) with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA[5].

The analytical results indicated that the following constituents were found to exceed the IEPA Tiered Approach to Corrective Action (TACO) Tier 1 ground-water ROs (locations in parentheses) (see Table 7):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Cadmium (MW-5); and,
- Lead (MW-10), (MW-12).

With respect to ground-water, no constituents were present above TACO Tier 1 ROs for Class II ground-water, and the Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as

[5] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

potable water. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground-water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

2.1.6 BB&J Phase II ESA: Future Use Evaluation

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation, which is discussed further in Appendix L. Specifically, BB&J collected three soil samples and three soil gas samples from the former southeastern portion of the Subject Property[6]. BB&J also conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the central portion of the Subject Property and to provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property (see Figure 6). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

Each of the soil samples were submitted for laboratory analysis of the following:

- VOCs by United States USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

In the BB&J Phase II ESA: Future Use Evaluation, BB&J compared the soil analytical results to IEPA TACO Tier 1 soil ROs for both residential and industrial-commercial properties, as the locations of the soil probes were initially within the proposed recreational use area of the Subject Property. However, the area where the three soil samples were collected is no longer proposed as the recreational use area. Rather, this area is proposed to be covered by the footprint of the proposed community center. Therefore, the analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs for commercial-industrial property (sample locations in brackets, depths in parentheses) (see Table 8):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [GP-1 (0 – 2 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Mercury [GP-1 (0 – 2 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene [GP-1 (0 – 2 feet bgs)]; and,

[6] Due to revisions in the design of the future development at the Subject Property, the soil samples collected from this area are located beneath the footprint of the proposed community center.

- Carbazole [GP-1 (0 – 2 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate than the Class I ground-water; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

2.1.7 BB&J Phase II ESA: Community Center

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. BB&J collected fourteen soil samples from seven geotechnical soil borings. Three of the geotechnical soil borings were converted into permanent monitoring wells[7]. Additionally, three soil gas samples were collected at approximately 5 feet bgs and one soil flux sample was collected from the ground surface in this area (See Figure 7). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses) (see Table 9):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Arsenic [CCSB-34 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Naphthalene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [CCSB-35 (1 –5)] feet bgs, [CCSB-36 (13.5 – 15 feet bgs)]; and,
- Mercury [CCSB-32 (3.5 – 5 feet bgs)].

[7] It should be noted that additional soil samples were collected during this investigation, however, they were not within the boundary of the current Subject Property.

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- TCE [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Lead [CCSB-32 (3.5 – 5 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water[8] and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

The analytical results indicated that the following constituents were found to exceed the IEPA Tiered Approach to Corrective Action (TACO) Tier 1 ground-water ROs (sample locations in parentheses) (See Table 10):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene (CCMW-36);
- Benzo(a)pyrene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36); and,
- Vinyl chloride (CCMW-32).

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Vinyl chloride (CCMW-32).

With respect to ground water in this area of the Subject Property, BB&J stated that the Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as potable water. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground-water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

2.1.8 BB&J Phase I ESA

The BB&J Phase I ESA was conducted in accordance with American Society of Testing and Materials (ASTM) E 1527-05, *Standard Practice for Environmental Site Assessments*, the "All Appropriate Inquiry Rule" (AAI). The following RECs were identified within the BB&J Phase I ESA:

- Historical Asphalt Plant Leaking Underground Pipe Incident; and,
- Historical Former Quarry Filling, including Former Pond.

[8] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

BB&J recommended that additional investigation with respect to these RECs be completed under the guidance of the IEPA SRP.

2.2 Site History

BB&J reviewed the following with respect to the historical use of the Subject Property:

- USGS 7.5 Minute Topographic Map, Berwyn, Illinois, dated 1998;
- Historical topographic maps, dated 1901, 1953, 1963, 1972, 1980, and 1993;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Sanborn Maps, dated 1930, 1951, 1975;
- Previous Investigations, referenced in Section 1.1;
- Information obtained from FOIA requests to the Illinois OSFM and IEPA Bureau of Land (BOL); and,
- Village of Lyons Building Department Records.

Based on historical records research, the Subject Property consisted of undeveloped property in 1901. Since the 1930s, the Subject Property has consisted of three main areas: a Former Quarry located in the central and western portions of the Subject Property, several structures located in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues, and several MSC buildings and associated parking lots located in the southeast portion of the Subject Property. More specifically:

Former Quarry / Former CCDD Fill Operation Area

From at least 1939 to 1953, the central and western portions of the Subject Property consisted of a limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. The land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff gray and brown clay and clay fill. Pockets of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional pockets of ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs.

From the early 1980s to 1995 an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the Former Quarry. In 1993, a leak in an underground pipe that connected to a diesel AST at the Palumbo facility was detected and was designated as IEMA Incident Number 931154.

Approximately 100 gallons of diesel fuel were released into the subsurface. An investigation indicated that the diesel fuel migrated to the Existing Quarry wall at the western adjoining property. Approximately 50 cubic yards of petroleum-impacted soil was removed from the asphalt plant at the Subject Property; however, a NFR letter was never issued for the release. According to the Alpha Environmental Report, concentrations of benzene and several PAHs in soil samples collected from the excavation exceeded IEPA TACO Tier 1 soil ROs for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway. The former asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as parts of the central portion of the Subject Property, was used as a staging area for CCDD for filling the Existing Quarry by Reliable. In addition, based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the former asphalt plant. The gasoline UST was installed in September 1987 and based upon historic maps of the area, was located directly west of the asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

In addition, there was a pond (Former Pond) located along the former eastern edge of the quarry near the north-central portion of the Subject Property from approximately 1980 to 2006. The pond was filled since 2006, and presently is a level, vacant area.

Northeast Area of Subject Property

There have been several structures on approximately 0.37-acre tract at the northeast of the Subject Property, at the corner of Ogden and Lawndale Avenues. In 1939, this tract was occupied by an apparent residential building. From 1951 to 1980, an apparent fuel station was located at this area. From 1988 to the present, this tract has been vacant. According to information obtained from the Illinois OSFM, five gasoline USTs, operated by MSC, were installed for the fuel station in 1957 and removed in 1995. During the removal of the USTs, a release of gasoline was documented (IEMA Incident Number 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fuel station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fuel station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a No Further Remediation (NFR) letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

MSC Buildings in Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. Currently, the north MSC warehouse building is no longer present. Additionally, a portion of the other MSC building located on the Subject Property and along Lawndale Avenue has been razed for redevelopment activities associated with the proposed community center.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD Fill Opeartion on the western adjoining property was acquired by Reliable.

2.3 Site Description

A Site Base Map and a Site and Vicinity Map are provided as Figures 1 and 2, respectively. The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a Former CCDD Fill Operation located within a Former Quarry at the Subject Property. The far western portion of the Subject Property is graded down toward the Existing Quarry on the western adjoining property. Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue that is currently operated by Material Services Corporation (MSC), former operator of the Former CCDD Fill Operation and owner of the Subject Property, and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fuel station at the corner of Ogden and Lawndale Avenues. Reliable, operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD also located on the west adjoining property.

The Subject Property is adjoined to the north by Ogden Avenue, beyond that by Plank Road Meadow and an abandoned auto-repair service station. The Subject Property is adjoined to the south by several other MSC buildings (a maintenance and office building) and a vacant lot. The Subject Property is adjoined to the east by Lawndale Avenue and beyond that by a vacant restaurant on the southeast corner of Ogden and Lawndale Avenues, residential and commercial property, and Smith Park. The Subject Property is adjoined to the west by the Existing Quarry operated by Reliable. The surrounding property appeared primarily as commercial and residential property.

2.3.1 Geology and Physical Setting

According to the EDR® Report in BB&J's Phase I ESA, dated October 26, 2007, the Subject Property is located in an area comprised of the soil type known as Urban land. Additionally, BB&J reviewed the *Soil Survey of Du Page and Part of Cook Counties, Illinois*, prepared by the United States Department of Agriculture, Soil Conservation Service, issued March 1979, for details regarding the soils at the Subject Property. The review indicated that soils at the Subject Property and the vicinity area were classified as Urban land – Markham – Ashkum, which were described as built-up areas and deep, gently rolling to

nearly level, moderately well drained and poorly drained soils that have a clayey and silty subsoil. These soils were formed in glacial till and located on uplands and lake plains. Urban Land is used to describe soils that cannot be identified due to extensive modification. The description of Urban land – Markham – Ashkum soils are generally consistent with soil encountered during the DAI and BB&J subsurface investigations in areas of the Subject Property that were not quarried and subsequently filled in.

Based on the data collected during DAI's site investigations at the former fuel station in the northeast portion of the Subject Property, the on site subsurface materials generally consisted of sandy clay or silty clay fill from approximately 0 to 3 feet bgs, followed by a layer of sandy clay from approximately 3 to 10 feet bgs and/or sandy clay. The deepest soil boring was advanced to a maximum depth of approximately 10 feet bgs.

Based previous investigations by BB&J, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs. Auger refusal, believed to be the top of limestone bedrock, was encountered at depths of 5 to 6 feet bgs on the northwest portion of the Subject Property, at a maximum depth of 60 feet bgs in the north-central portion of the Subject Property, between 20 to 40 feet bgs on the eastern portion of the Subject Property, and 15 to 22 feet bgs on the southern portion of the Subject Property. The variability in bedrock depth is believed to be attributable to historic quarrying activities and due to the natural formation of the weathered, limestone bedrock beneath the overlying soil.

According to the United States Geologic Survey (USGS) Urbana, Illinois Quadrangle 7.5-minute series topographic map dated 1975 and site-specific surveys, the Subject Property is located at an approximate elevation of 620 feet above the National Geodetic Vertical Datum of 1929, with a steep slope on the west portion of the Subject Property to an elevation of approximately 570 feet NGVD.

2.3.2 Ground-Water Observations, Hydraulic Conductivity and Classification

BB&J has collected a total of seven ground-water samples from seven permanent monitoring wells installed during two of BB&J's subsurface investigations, June 2007 Phase II ESA: Strategy and Sampling – Commercial Development and June 2007 Phase II ESA: Strategy and Sampling – Community Center.

Ground water was observed during drilling at depths that ranged from 8 feet to 19 feet bgs during the June 2007 Phase II ESA: Strategy and Sampling – Commercial Development in the north portion of the Subject Property. Ground water was encountered at a depth just above the limestone bedrock in each of the four permanent monitoring wells in the north portion of the Subject Property. Based upon measured ground-water elevations[9], the ground water at the Subject Property appears to flow generally to the east-southeast[10] (Refer to Figure 8 for a Potentiometric Map of the north portion of the Subject Property).

Ground water was observed during drilling at depths that ranged from 11 feet to 12 feet bgs during the June 2007 Phase II ESA: Strategy and Sampling – Community Center in the southeast portion of the

[9] Ground-water elevations were calculated from a land survey of the four permanent monitoring wells performed on May 18, 2007 during BB&J's Phase II ESA investigation.
[10] It should be noted that DAI estimated the ground-water flow direction in the northeast portion of the Subject Property to be west-southwest.

Subject Property. Ground water was encountered at a depth just above the limestone bedrock in each of the three permanent monitoring wells in the southeast portion of the Subject Property. Based upon measured ground-water elevations[11], the ground water at the Subject Property appears to generally flow radially from CCMW-36 to the north-northeast and north-northwest[12] (Refer to Figure 9 for a Potentiometric Map of the southeast portion of the Subject Property).

Additionally, DAI conducted a hydrogeological investigation at the former fuel station on the northeast portion of the Subject Property as identified in the DAI CACR Amendment. Ground water was observed at depths that ranged approximately from 5 to 10 feet bgs in three permanent monitoring wells in this area. Ground water was encountered at a depth just above the limestone bedrock in each of the three permanent monitoring wells where water was observed. Based upon measured ground-water elevations, DAI estimated the ground-water flow direction in this area to be west-southwest at a hydraulic gradient of 0.022 feet per feet. DAI also conducted a rising-head slug test on February 3, 1999 on two monitoring wells (MW-1 and MW-4) that contained water. According to the DAI CACR Amendment, the highest hydraulic conductivity calculated was 6.5 cm/day (See Appendix F for additional details).

Based upon these findings, according to the definitions of Class I and Class II ground water presented in 35 IAC 620, BB&J believes that the ground-water unit sampled at the Subject Property meets the definition of Class II ground water.[13] Specifically, to meet the definition of a Class I ground-water resource, a water-bearing unit must be:

Ground water located 10 feet or more below the land surface and within:

- *The minimum setback zone of a well which serves as a potable water supply and to the bottom of such well;*
- *Unconsolidated sand, gravel or sand and gravel which is 5 feet or more in thickness and that contains 12 percent or less of fines (i.e. fines which pass through a No. 200 sieve tested according to ASTM Standard Practice D24488-84, incorporated by reference at Section 620.125);*
- *Sandstone which is 10 feet or more in thickness, or fractured carbonate which is 15 feet or more in thickness; or*
- *Any geologic material which is capable of a:*
    - *Sustained groundwater yield , from up to a 12 inch borehole, of 150 gallons per day or more from a thickness of 15 feet or less; or*
    - *Hydraulic conductivity of $1x10^{-4}$ centimeters per second (cm/sec) or greater using one of the following test methods or its equivalent:*
        - *Permeameter;*
        - *Slug test; or*
        - *Pump test.*

[11] Ground-water elevations were calculated from a land survey of the four permanent monitoring wells performed on June 5, 2007 during BB&J's Phase II ESA investigation.
[12] DAI estimated the ground-water flow direction in the northeast portion of the Subject Property to be west-southwest.
[13] Class I and Class II designations can only be made by the IEPA following their review of relevant and applicable information prepared and submitted to the Agency.

As a result of BB&J's and DAI's findings, it appears that the shallow-water bearing unit at the Subject Property meets the definition of Class II ground water for the following reasons:

- The Subject Property is situated outside of the setback of potable water supply wells, as the Village of Lyons receives its water supply from Lake Michigan. In addition, the Village of Lyons' Ordinance 5-18-99-3 was accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons and states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons;
- The borings did not encounter water-bearing soil strata consisting of unconsolidated sand, gravel or sand and gravel which is 5 feet or more in thickness and that contains 12 percent or less of fines;
- The borings did not encounter water-bearing sandstone which is 10 feet or more in thickness, or fractured carbonate which is 15 feet or more in thickness; and,
- The slug test results indicated a maximum hydraulic conductivity for the shallow water bearing unit of 7.5×10^{-5} cm/sec as determined by DAI, which is less than the standard of 1×10^{-4} cm/sec.

Consequently, in BB&J's opinion, ground water present in the area where wells were installed by BB&J and DAI appears to meet the definition of Class II ground water, not the Class I designation.

2.3.3 Potential Migration Pathways and Exposure Routes

Potential pathways along which COCs could migrate to potential human receptors appear to be limited to future man-made underground utilities at the Subject Property during the development of the Subject Property. During BB&J's previous investigations, COCs, including SVOCs [benzo(a)anthracene, benzo(b)fluoranthene, and benzo(k)fluoranthene], VOCs (vinyl chloride), and RCRA metals (cadmium and lead) were detected in the ground water at concentrations exceeding the IEPA Tier 1 Ground-Water ROs (refer to Tables 7 and 10) for Class I and/or II Ground Water.

BB&J contacted the following agencies in order to determine if there were any water wells, public or private, and/or any injection wells within 1,000 feet of the most down gradient point of the Subject Property:

- Illinois State Geological Survey (ISGS);
- Illinois State Water Survey (ISWS);
- IEPA Division of Public Water Supply;
- IEPA Bureau of Land;
- Illinois Department of Public Health (IDPH);
- Cook County Health Department;
- Village of Lyons Department of Public Works (DPW).

BB&J has reviewed maps available on the ISGS Illinois Water Well Internet Map Service (http://www.isgs.uiuc.edu/maps-data-pub/wwdb/launchims.shtml) regarding public and private monitoring wells. No wells were found within 1,000 feet of Subject Property. BB&J submitted a search request with the ISWS for a list of wells in the ISWS database within Section 2 of Township 38 NORTH Range 12 EAST, which is the location of the Subject Property. No water wells were located within 1,000 feet of the

Subject Property. BB&J submitted a FOIA request to the IEPA Bureau of Water, Division of Public Water Supplies' web-based Source Water Assessment Geographical Information System (GIS) for water wells located within 1,000 feet of the Subject Property. No water wells were reported within 1,000 feet of the Subject Property. A FOIA request response from the IEPA Bureau of Land indicated that there were no sites within 1,000 feet of the Subject Property listed on the Underground Injection Control database. Mr. Jerry Dolson of the IDPH and Mr. Dave Rohbock of the Cook County Health Department indicated that water well records were not kept by the IDPH or County Health Department and to contact the ISWS. The Village of Lyons DPW reported there were no water wells within 1,000 feet of the Subject Property.

The Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows (Figure 3):

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the quarried portion of the Subject Property;
- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,
- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center Similar to the proposed commercial area, it is believed that the entirety of this area will be south of the quarried portion of the Subject Property.

As such,

- The proposed commercial buildings and asphalt parking lots in the commercial development will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil;
- The proposed recreational use and green space areas will be covered with a compacted clay cap that will act as an engineered barrier to eliminate both the ingestion and inhalation exposure pathways. However, current modeling suggests that no inhalation risk exists in outdoor areas at the Subject Property; and,
- The proposed community center building and asphalt parking lots in the southeast portion of the Subject Property will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil. In addition, a vapor barrier membrane and passive vent system beneath the proposed community center is planned at this time.

Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons". Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

2.3.4 Post-Remediation Property Use

The Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows:

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the former quarried portion of the Subject Property;
- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,
- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be south of the former quarried portion of the Subject Property.

2.4 Site Base Map

Please refer to Figure 2 for a copy of the Site Base map.

2.5 Legal Description

Please refer to Appendix B for a copy of the legal description for the Subject Property.

3.0 SITE-SPECIFIC SAMPLING PLAN

3.1 AE Investigation

The sampling procedures utilized during the AE investigation at the former asphalt plant are summarized below. Detailed sampling procedures are documented in the AE Investigation, which are included as Appendix D.

The AE subsurface investigation included the collection of a grab liquid sample from the surface water in the trench along the quarry roadway and a grab liquid sample of the diesel AST, as well as soil samples from an excavation area in the area of an underground pipe and the diesel AST. The collected grab samples were analyzed according to USEPA SW-846 methods:

- TPH by USEPA Method 3510/8015.

The collected soil samples were analyzed according to following USEPA SW-846 Methods:

- BTEX by USEPA Method 8020 (modified); and,
- PAHs by USEPA Method 8310.

3.2 DAI Investigations

The sampling procedures utilized during DAI's investigations at the former fuel station are summarized below. Detailed sampling procedures are documented in the DAI CACR, DAI Attachments to CACR, and DAI CACR Amendment, which are included as Appendix E, F, and G.

DAI's investigations included the collection of soil and ground-water samples from throughout the former fuel station property and beneath Ogden and Lawndale Avenues. The collected soil and ground-water samples were analyzed using USEPA SW-846 methods, as follows:

- VOCs by USEPA Method 5035/8260B;
- BTEX by USEPA Method 5035/8260B;
- PAHs by USEPA Method 8270C;
- TCLP lead by USEPA Method 1311/6010B;
- Lead by USEPA Method 6010B;
- Paint filter by USEPA Method 9095;
- Moisture content, ash content, organic matter content by ASTM Method D2974 A&C;
- Flashpoint by ASTM Method D492;
- pH by USEPA Method 9040/9041.

The data are in Appendix E, F, and G.

3.3 BB&J Investigations

The sampling procedures utilized during BB&J's investigations were conducted in accordance with the scope of work outlined in BB&J's proposals PN7-0109, PN7-0117, PN7-0136 and have been incorporated into the Site-Specific Sampling Plan. The information below provides a detailed description of BB&J's sampling activities thus far at the Subject Property.

3.3.1 BB&J Phase II ESA: Commercial Development

The sampling procedures utilized during the BB&J Phase II ESA: Commercial Development are summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Commercial Development, which are included as Appendix H.

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted near the north edge of the Former Quarry / Former CCDD Fill Operation. The report indicated that BB&J collected eighteen soil samples ranging from the surface to 60 feet below ground surface (bgs) from twelve geotechnical borings, four ground-water samples from four permanent monitoring wells, and three soil gas samples from 5 feet bgs (see Figure 5). The soil gas survey is not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L. The twelve geotechnical borings, and the subsequent four monitoring wells, were advanced to bedrock in each location. The geotechnical borings ranged from approximately 5 to 60 feet bgs.

Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The data are in Appendix H.

3.3.2 BB&J Phase II ESA: Future Use

The sampling procedures utilized during the BB&J Phase II ESA: Future Use is summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Future Use, which are included as Appendix I.

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation which is discussed further in Appendix L. Specifically, BB&J collected three soil samples and three soil gas samples from the former southeastern portion of the Subject Property[14]. BB&J also conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the soil beneath the central portion of the Subject Property and to provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property (see Figure 6). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

Each of the soil samples were submitted for laboratory analysis of the following:

- VOCs by United States USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The data are in Appendix I.

[14] Due to revisions in the design of the future development at the Subject Property, the soil samples collected from this area are located beneath the footprint of the proposed community center.

3.3.3 BB&J Phase II ESA: Community Center

The sampling procedures utilized during the BB&J Phase II ESA: Community Center is summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Community Center, which are included as Appendix J.

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. BB&J collected fourteen soil samples from seven geotechnical soil borings. Three of the geotechnical soil borings were converted into permanent monitoring wells[15]. Additionally, three soil gas samples were collected at approximately 5 feet bgs and one soil flux sample was collected from the ground surface in this area (see Figure 7). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The data are in Appendix J.

4.0 DOCUMENTATION OF FIELD ACTIVITIES

4.1 AE Investigation

As described in Sections 1.1.1 and 2.1, the AE Report addressed the work performed in response to a diesel release from an underground pipe connected to a diesel AST at the former asphalt plant operations, operated by Palumbo Bros. Inc. [(Palumbo), parent company of Orange Crush Recycle, Co.], on the west portion of the Subject Property. MSC owned the property the asphalt plant occupied during the date of the AE Report.

The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the Existing Quarry on the west adjoining property, reported “organic material” visible from a single seep along a roadway leading into the Existing Quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the “organic material” along

[15] It should be noted that additional soil samples were collected during this investigation, however, they were not within the boundary of the current Subject Property.

the roadway. Based on the assumption that the diesel loss and the visible "organic material" were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident No. 931154).

A site reconnaissance of the former asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2-inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of 5 to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a laboratory for analysis of TPH for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel.

Upon confirmation that the material in the Existing Quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off site. Four soil samples collected from the sidewalls of the excavation (identified as W-1N, W-1S, W-1E, and W-1W) and one composite soil sample collected from the floor of the excavation (identified as F-1) were submitted for laboratory analysis of the following:

- BTEX by USEPA Method 8020 (modified); and,
- PAHs by USEPA Method 8310.

The laboratory analytical results from the AE Investigation are presented in Table 1. A figure showing the approximate excavation boundaries sampling locations are presented in Figure 4. A copy of the AE Report is provided as Appendix D.

4.2 DAI Investigations

As described in Sections 1.1.2 through 1.1.4, DAI performed subsurface investigations at the former fuel station located in the northeast portion of the Subject Property.

According to the 45-Day DAI Report, DAI CACR, and attachments therein, five USTs were removed on June 27, 1995 from the former fuel station located at the intersection of Ogden and Lawndale Avenues in the northeast portion of the Subject Property. This property consists of approximately 0.368 acres and was not located within the boundaries of the Former Quarry / Former CCDD Fill Operation. The table below summarizes the UST information reviewed by BB&J from the 45-Day Report and DAI CACR:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported IEMA Incident	IEMA Incident No.	On site / Off site
MSC18-3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	Off site
MSC18-7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On site
MSC18-8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	On site

It should be noted that UST ID No. MSC18-6, also referred to as the UST located at the Haffner site in the 45-Day DAI Report and DAI CACR, is not located at the Subject Property. Rather, the location of this UST is approximately 1/2-mile to the southwest near the intersection of 44th Place and Riverside Avenue. It appears that this UST is included within the 45-Day DAI Report and CACR and given the same Incident No. as the on site USTs because the USTs were removed by the same company[16] on consecutive days and both locations of USTs had observed releases.

The following DAI investigations were completed to address the leaking USTs:

4.2.1 DAI Phase II ESA

Prior to removal of the on site former fuel station USTs, eleven soil borings were advanced in the area of the USTs on March 14, 1995 to determine the extent of the upcoming excavation around the USTs. A total of nine soil samples from nine soil borings (identified as B-1 through B-9) were submitted for laboratory analysis of the following:

- BTEX by USEPA Method 5035/8260B; and,
- PAHs by USEPA Method 8270C.

Sampling methodology and depths of the soil samples were not described or recorded within the 45-Day DAI Report or DAI CACR or on the laboratory chain of custody.

The laboratory analytical results from the DAI Phase II ESA Investigation are presented in Table 2. A figure showing the approximate excavation boundaries sampling locations are presented in Figure 4. A copy of the 45-Day DAI Report from where the above information originated is provided as Appendix E.

4.2.2 DAI Attachments to CACR

According to the DAI Attachments to CACR, the IEPA rejected DAI's request for the NFR letter on "the basis that the extent of soil and ground-water contamination has not been fully investigated/delineated." A *Site Classification WorkPlan*, prepared by DAI, and dated August 3, 1998, was submitted to the IEPA per the IEPA's request for further investigation. The IEPA approved the workplan on December 2, 1998

[16] Waterways Transportation Services

pending four modifications. The four modifications were not described within the DAI Attachments to CACR.

In February and May 1999, fifteen soil borings (identified as SB-1 through SB-15) were drilled at the former fuel station property to collect soil samples to further delineate the petroleum impacts. The borings were drilled to a depth of approximately 10 feet bgs where bedrock was encountered. The soil samples were submitted for one or more of the following:

- VOCs by USEPA Method 5035/8260B;
- PAHs by USEPA Method 8270C;
- TCLP lead by USEPA Method 1311/6010B;
- Lead by USEPA Method 6010B;
- Paint filter by USEPA Method 9095;
- Moisture content, ash content, organic matter content by ASTM Method D2974 A&C;
- Flashpoint by ASTM Method D492; and,
- pH by USEPA Method 9040/9041.

Furthermore, four of the soil borings, from the north, south, east, and west corners of the Subject Property, respectively, were converted into permanent monitoring wells (identified as MW-1 through MW-4) for collection of ground-water samples. Ground-water samples were collected from the other three monitoring wells and submitted for laboratory analysis of the following:

- BTEX by USEPA Method 5035/8260B;
- PAHs by USEPA Method 8270C; and,
- Lead by USEPA Method 6010B.

DAI also conducted a rising-head slug test on February 3, 1999 on two monitoring wells (MW-1 and MW-4) that contained ground-water.

The laboratory analytical results from the DAI Phase II ESA Investigation are presented in Tables 3 and 4. A figure showing the approximate excavation boundaries sampling locations are presented in Figure 4. A copy of the AE Report is provided as Appendix F.

4.2.3 Additional DAI Investigation

As addressed in the DAI Attachments to CACR and the DAI CACR Amendment, based upon the IEPA's request for additional sampling beneath the Ogden and Lawndale Avenues, DAI advanced four soil borings (identified as SB-16 through SB-19) to bedrock (approximately 10.5 feet bgs) within Ogden and Lawndale Avenues north of the former fuel station upon obtaining approval from the IDOT. Two soil samples were collected from three of the soil borings at depths of 3 to 5 feet bgs and 5 to 7 feet bgs, while the soil samples collected from the other soil boring were at depths of 5 to 7 feet bgs and 7 to 9 feet bgs. Soil samples were submitted for laboratory analysis of the following:

- BTEX by USEPA Method 5035/8260B; and,
- PAHs by USEPA Method 8270C.

The laboratory analytical results from the Additional DAI Investigation are presented in Table 4. A figure showing the approximate excavation boundaries and sampling locations are presented in Figure 4. A copy of the DAI CACR Amendment is provided as Appendix G.

4.3 BB&J Phase II ESAs

As described in Section 2.3, BB&J performed several subsurface investigations in conjunction with geotechnical investigations at various locations at the Subject Property. The following is a summary of those investigations:

4.3.1 BB&J Phase II ESA: Commercial Development

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation which is discussed in Appendix L; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted near the north edge of the Former Quarry / Former CCDD Fill Operation. The report indicated that BB&J collected eighteen soil samples ranging from the ground surface to 60 feet bgs from twelve geotechnical borings, four ground-water samples from four permanent monitoring wells, and three soil gas samples from 5 feet bgs (see Figure 5). The soil gas survey is not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L. The twelve geotechnical borings, and the subsequent four monitoring wells, were advanced to bedrock in each location. The geotechnical borings ranged from approximately five to 60 feet bgs.

4.3.1.1 Subsurface Soil Investigation

On May 14, 2007 through May 18, 2007, BB&J provided oversight for the advancement of eleven soil borings utilizing a hollow stem auger (SB-1 through SB-3[17], and SB-5 through SB-12) by HH Holmes. The eleven geotechnical borings were advanced near the corners of the proposed three commercial buildings on the north portion of the Subject Property. The soil borings were located as follows:

- Three soil borings were advanced in the location of the most western proposed commercial building (SB-1 through SB-3);
- One soil boring, SB-5, was advanced in the location of the proposed entrance drive between the proposed western and central buildings;
- Four soil borings, SB-6 through SB-9, were advanced in the location of the center proposed commercial building; and,
- Three soil probes, SB-10 through SB-12, were advanced in the location of the most eastern proposed commercial building. Refer to Figure 2 for a site plan showing soil boring locations.

Soil samples were collected concurrently with the geotechnical investigation at the Subject Property and in accordance with BB&J's field procedures, as summarized in Attachment C. BB&J collected the soil samples, performed visual classification of soil type(s), field screened the samples using a photoionization detector (PID), and submitted select soil samples for laboratory chemical analyses.

[17] No boring designated "SB-4" was advanced during this investigation due to site access constraints.

As described in BB&J Proposal PN7-0109, two to three soil samples from 6 of the 11 soil borings were submitted from the following depths to First Environmental Laboratories, Inc. of Naperville, Illinois (First Environmental)[18] for chemical analyses:

- Near surface (0 to 2 feet bgs);
- Bottom of each boring; and,
- One or more additional depths based on field observations and field screening.

The exceptions to this protocol are as follows:

- BB&J submitted a sample collected from the vicinity of SB-5 based on a small quantity of black liquid that was observed at the surface during the field work.
- Due to a lack of recovery, BB&J was not able to submit a "near surface" sample for SB-10; BB&J, however, did submit a sample from 6.5 to 7 feet bgs, the nearest surface sample possible for the boring.

The following soil samples were selected for laboratory analyses:

SB-3
- 1-2.5 feet bgs
- 3.5-5 feet bgs
- 13.5-15 feet bgs

SB-5
- 3.5-5 feet bgs
- 6-7.5 feet bgs

Vicinity SB-5
- 0-1 feet bgs

SB-7
- 1-2.5 feet bgs
- 6.5-7 feet bgs
- 58.5-60 feet bgs

SB-9
- 1-2.5 feet bgs
- 6-7.5 feet bgs
- 18.5-20 feet bgs

SB-10
- 6.5-7 feet bgs
- 8.5-10 feet bgs
- 18.5-20 feet bgs

SB-12
- 1-2.5 feet bgs
- 8.5-10 feet bgs
- 13.5-15 feet bgs

Each of the soil samples collected from the soil borings were analyzed for the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A; and,
- pH by USEPA Method 4500H+B.

[18] First Environmental is accredited with the State of Illinois' IEPA and NELAP, and is compliant with the current rules and regulations established by the National Environmental Laboratory Accreditation Conference (NELAC).

The laboratory analytical results from the BB&J Phase II ESA: Commercial Development is presented in Tables 6 and 7. A figure showing the approximate sampling locations are presented in Figure 5. A copy of the BB&J Phase II ESA: Commercial Development Amendment is provided as Appendix H.

4.3.1.2 Ground-Water Investigation

On May 17, 2007, BB&J provided oversight for the installation of four permanent monitoring wells (MW-5, MW-9, MW-10, and MW-12) in their respective geotechnical boring locations by HH Holmes. On May 18, 2007, BB&J purged each of the four permanent monitoring wells, allowed the well to recharge, and collected ground-water samples from each of the wells. The samples collected were analyzed for the following:

- VOCs by USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A; and,
- pH by USEPA Method 4500H+B.

Additionally, ground-water elevations were calculated from a land survey of MW-5, MW-9, MW-10, and MW-12, performed on May 18, 2007, by BB&J. Details of the subsurface assessment activities are presented within the Field Procedures (Appendix C).

The laboratory analytical results from the BB&J Phase II ESA: Commercial Development is presented in Tables 6 and 7. A figure showing the approximate sampling locations are presented in Figure 5 and 8. A copy of the BB&J Phase II ESA: Commercial Development is provided as Appendix H.

4.3.1.3 Quality Assurance / Quality Control (QA/QC)

An equipment rinsate sample of the hollow-stem auger also was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochlorine pesticides and pH. The laboratory supplied the trip blank sample for quality QA/QC purposes. The trip blank sample was analyzed for VOCs.

4.3.2 BB&J Phase II ESA: Future Use

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation which is discussed further in Appendix L. Specifically, BB&J collected three soil samples and three soil gas samples from the former southeastern portion of the Subject Property[19]. BB&J also performed a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the soil beneath the central portion of the Subject Property and to provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property (see Figure 6). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

[19] Due to revisions in the design of the future development at the Subject Property, the soil samples collected from this area are located beneath the footprint of the proposed community center.

4.3.2.1 Subsurface Soil Investigation

On May 11, 2007, BB&J provided oversight for the drilling of three soil probes using direct-push technology (i.e., Geoprobe®) by Terra Trace. The three soil probes (GP-1, GP-2, and GP-3) were advanced on the former southern property boundary of the Subject Property, which is currently located within the area of the proposed community center.

Soil samples were collected continuously until the termination depth of each soil probe at 12 feet bgs. BB&J collected the soil samples, performed visual classification of soil type(s), field screened the samples using a PID, and submitted select soil samples for laboratory chemical analyses.

Based on field screening results, one worst case[20] soil sample was submitted from each soil probe to First Environmental for chemical analyses. The following samples were submitted:

- GP-1 from 0-2 feet bgs;
- GP-2 from 4-6 feet bgs; and,
- GP-3 from 4-6 feet bgs.

The soil samples collected from GP-1, GP-2, and GP-3 were analyzed for the following:

- VOC by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8081A; and,
- pH by USEPA Method 9040B/9045C.

During the May 11, 2007 Subsurface Soil Investigation, no ground-water was encountered; therefore, no ground-water samples could be collected from any of the soil probe locations.

Details of these assessment activities are presented within the Field Procedures (Appendix C). The laboratory analytical results from the BB&J Phase II ESA: Future Use is presented in Table 8. A figure showing the approximate sampling locations are presented in Figure 6. A copy of the BB&J Phase II ESA: Future Use is provided as Appendix I.

4.3.2.2 QA/QC

An equipment rinsate sample of the Geoprobe® liner was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochlorine pesticides, and pH. The laboratory supplied the trip blank sample for QA/QC purposes. The trip blank sample was analyzed for VOCs.

[20] A "worst case" soil sample was submitted based on: 1) the soil sample that exhibited the highest PID screening results; and/or, 2) appeared to exhibit the most prominent staining; and/or, 3) exhibited the strongest potential chemical odor (or, in the absence of an apparent chemical odor, the strongest anomalous odor, as noted).

4.3.3 BB&J Phase II ESA: Community Center

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. BB&J collected fourteen soil samples from seven geotechnical soil borings. Three of the geotechnical soil borings were converted into permanent monitoring wells[21]. Additionally, three soil gas samples were collected at approximately 5 feet bgs and 1 soil flux sample was collected from the ground surface in this area (see Figure 7). The soil gas survey and flux chamber survey are not included within the scope of this SIR; however, a discussion of sampling methodology and results can be found in Appendix L.

4.3.3.1 Subsurface Soil Investigation

On June 1, 2007 and June 4, 2007, BB&J provided oversight for the advancement of 13 soil borings using a hollow stem auger (CCSB-28 through CCSB-40[22]) by HH Holmes. The soil borings were located as follows:

- Six soil borings, CCSB-32 through CCSB-37, were advanced in the general location of the proposed community center;
- Three soil borings, CCSB-28 through CCSB-30, were advanced north of the proposed community center; and,
- One soil boring, CCSB-31, was advanced along the edge of the quarry, on the western side of the Subject Property.

Soil samples were collected concurrently with the geotechnical investigation at the Subject Property and in accordance with BB&J's field procedures, as summarized in Attachment C. BB&J collected the soil samples from soil borings CCSB-31 through CCSB-37, performed visual classification of soil type(s), field screened the samples using a PID, and submitted select soil samples for laboratory chemical analyses.

As described in BB&J Proposal No. PN7-0136, two soil samples from 10 soil borings were sampled and submitted from the following depths to First Environmental for chemical analyses:

- Near surface (i.e. zero to three feet bgs)[23]; and,
- One additional depth based on field observations and field screening.

As such, the following soil samples were selected for laboratory analyses:

[21] It should be noted that additional soil samples were collected during this investigation, however, they were not within the boundary of the current Subject Property.
[22] As previously noted, three soil borings (and subsequently six soil samples) were not located at the Subject Property. Rather, soil borings CCSB-38 through CCSB-40 were located on the south adjoining property and have not been included within the discussion of this SIR.
[23] Due to a lack of recovery, BB&J was not able to submit a sample from 1.0 to 3.0 feet bgs for each boring, in which case BB&J submitted a sample from 3.5 to 5.0 feet bgs. For soil boring CCSB-34, a sample from 6-7.5 feet bgs was the nearest sample to the surface possible for the boring.

CCSB-31
- 6-7.5 feet bgs
- 8.5-10 feet bgs

CCSB-32
- 1-2.5 feet bgs
- 3.5-5 feet bgs

CCSB-33
- 3.5-5 feet bgs
- 13.5-15 feet bgs

CCSB-34
- 6-7.5 feet bgs
- 18.5-20 feet bgs

CCSB-35
- 1-5 feet bgs
- 13.5-15 feet bgs

CCSB-36
- 3.5-5 feet bgs
- 13.5-15 feet bgs

CCSB-37
- 3.5-5 feet bgs
- 13.5-15 feet bgs

Each of the soil samples collected from the soil borings were analyzed for the following:

- VOC by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

Details of these assessment activities are presented within the Field Procedures (Appendix C). The laboratory analytical results from the BB&J Phase II ESA: Community Center is presented in Table 9 and 10. A figure showing the approximate sampling locations are presented in Figure 7 and 9. A copy of the BB&J Phase II ESA: Community Center is provided as Appendix J.

4.3.3.2 Ground-Water Investigation

On June 1, 2007 and June 4, 2007, BB&J provided oversight for the installation of three permanent monitoring wells (CCMW-34, CCMW-35, and CCMW-36) in their respective soil boring locations by HH Holmes. On June 5, 2007, BB&J purged each of the three permanent monitoring wells, allowed the well to recharge, and collected ground-water samples from each of the wells. The samples collected were analyzed for the following:

- VOCs by USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

Details of these assessment activities are presented within the Field Procedures (Appendix C). The laboratory analytical results from the BB&J Phase II ESA: Community Center is presented in Table 9 and 10. A figure showing the approximate sampling locations are presented in Figure 7 and 9. A copy of the BB&J Phase II ESA: Community Center is provided as Appendix J.

4.3.3.3 QA/QC

An equipment rinsate sample of the Geoprobe® liner was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochlorine pesticides, and pH. The laboratory supplied the trip blank sample for QA/QC purposes. The trip blank sample was analyzed for VOCs.

5.0 ENDANGERMENT ASSESSMENT

Elements of an Endangerment Assessment as outlined in 35 IAC 740.425 [(5)(A) through (5)(E)] are discussed in the following sections.

5.1 Discussion of Analytical Results

Analytical results are discussed in the following sections.

5.1.1 BB&J Phase II ESA: Commercial Development

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses) (see Table 6):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(a)pyrene {SB-3 (3.5 – 5 feet bgs)], [SB-5 vicinity (0 – 1 feet bgs)], [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs);
- Indeno(1,2,23-cd)pyrene [SB-7 (6 – 7.5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Inhalation Exposure Route for Industrial-Commercial Property

- Naphthalene [SB-7 (58.5 – 60 feet bgs)].

Soil Ingestion Exposure Route for Construction Worker for Industrial-Commercial Property

- Benzo(a)pyrene [SB-7 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Total xylenes [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Naphthalene [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Mercury [SB-3 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzene [SB-7 (6 – 7.5 feet bgs)];
- Vinyl chloride [SB-3 (3.5 – 5 feet bgs)];
- Benzo(a)pyrene [(SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Indeno(1,2,3-cd)pyrene [SB-7 (6 – 7.5 feet bgs)];
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,

- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier could be used to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 ground-water ROs (locations in parentheses) (see Table 7):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Cadmium (MW-5); and,
- Lead (MW-10), (MW-12).

With respect to ground water, no constituents were present above TACO Tier 1 ROs for Class II ground-water. The Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as potable water. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground-water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

5.1.2 BB&J Phase II ESA: Future Use

In the BB&J Phase II ESA: Future Use Evaluation, BB&J compared the soil analytical results to IEPA TACO Tier 1 soil ROs for residential, as well as for industrial-commercial properties, as the locations of the soil probes were initially located within the proposed recreational use area of the Subject Property. However, the area where the three soil samples were collected is no longer proposed as the recreational use area. Rather, this area is proposed to be covered by the footprint of the proposed community center. Therefore, the analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs for industrial-industrial property (sample locations in brackets, depths in parentheses) (see Table 8):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [GP-1 (0 – 2 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Mercury [GP-1 (0 – 2 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene [GP-1 (0 – 2 feet bgs)]; and,
- Carbazole [GP-1 (0 – 2 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

5.1.3 BB&J Phase II ESA: Community Center

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses) (see Table 9):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Arsenic [CCSB-34 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Naphthalene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [CCSB-35 (1 –5)] feet bgs, [CCSB-36 (13.5 – 15 feet bgs)]; and,
- Mercury [CCSB-32 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- TCE [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Lead [CCSB-32 (3.5 – 5 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 ground-water ROs (sample locations in parentheses) (see Table 10):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene (CCMW-36);
- Benzo(a)pyrene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36); and,
- Vinyl chloride (CCMW-32).

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Vinyl chloride (CCMW-32).

With respect to ground water in this area of the Subject Property, the Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as potable water. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground-water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

5.2 Identified Recognized Environmental Conditions

Based on a review of the previous reports prepared for the Subject Property, and results of the BB&J's previous investigations, applicable RECs at the Subject Property consist of the following:

RECs	COC(s)[24]
• *Historical Asphalt Plant Area and Underground Diesel Pipe Release located in the west portion of the Subject Property and within the Former Quarry;*	• *VOCs, PAHs, RCRA metals*
• *Former Pond located in the north-northeast portion of the Subject Property and near the edge of the northeast boundary of the Former Quarry; and,*	• *VOCs, PAHs, RCRA metals*
• *Former Quarry and Former CCDD Fill Operation in the central and western portions of the Subject Property.*	• *VOCs, PAHs, RCRA metals*

[24] Per BB&J's Conceptual Work Plan, as addressed in the Conclusions section of this SIR, other COCs may be present at the Subject Property and will be investigated pursuant to Target Compound List (TCL) parameters as defined in Appendix A of 35 IAC 740.

5.2.1 Exposure Routes

Evaluation of the data collected at the Subject Property and the review of Subpart C, Section 742.300 – Exclusion of Exposure Routes (inhalation, soil and ground water ingestion) indicate the following conditions at the Subject Property:

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(a)pyrene {SB-3 (3.5 – 5 feet bgs)], [SB-5 vicinity (0 – 1 feet bgs)], [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [CCSB-32[25] (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [GP-1 (0 – 2 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs);
- Indeno(1,2,23-cd)pyrene [SB-7 (6 – 7.5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)], [CCSB-34 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Industrial-Commercial Property

- Naphthalene [SB-7 (58.5 – 60 feet bgs)].

Soil Ingestion Exposure Route for Construction Worker for Industrial-Commercial Property

- Benzo(a)pyrene [SB-7 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Total xylenes [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Naphthalene [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)], [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [CCSB-35 (1 –5)] feet bgs, [CCSB-36 (13.5 – 15 feet bgs)]; and,

- Mercury [SB-3 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [GP-1 (0 – 2 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzene [SB-7 (6 – 7.5 feet bgs)];
- Vinyl chloride [SB-3 (3.5 – 5 feet bgs)];
- Benzo(a)anthracene [GP-1 (0 – 2 feet bgs)];
- Benzo(a)pyrene [(SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)], Carbazole [GP-1 (0 – 2 feet bgs)];

- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,

[25] The abbreviation CCSB was used to denote community center soil boring.

- Indeno(1,2,3-cd)pyrene [SB-7 (6 – 7.5 feet bgs)];
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- TCE [CCSB-32 (3.5 – 5 feet bgs)];
- Lead [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

The Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows:

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the quarried portion of the Subject Property;

- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,

- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be south of the quarried portion of the Subject Property.

As such, to mitigate the soil inhalation and ingestion exposure pathways, and the soil component of the ground-water ingestion exposure route, the following methods will be utilized:

- The proposed commercial buildings and asphalt parking lots in the commercial development will act as an engineered barrier;

- The proposed recreational use and green space areas will be covered with a compacted clay cap that will act as an engineered barrier to eliminate both the ingestion and inhalation exposure pathways. It should be noted, however, that current modeling suggests that no inhalation risk exists in outdoor areas at the Subject Property; and,

- The proposed community center building and asphalt parking lots in the southeast portion of the Subject Property will act as an engineered barrier. In addition, a vapor barrier membrane and passive vent system beneath the proposed community center is planned at this time.

To mitigate the soil component of the ground-water ingestion exposure route, Village of Lyons' ordinance (No. 5-18-99-3) restricts the use of ground water as potable water[26] and the Village of Lyons' MOU with the IEPA prohibits the use of ground-water as a potable water supply.

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene (CCMW-36);
- Benzo(k)fluoranthene (CCMW-36);
- Cadmium (MW-5); and,
- Lead (MW-10), (MW-12).

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Vinyl chloride (CCMW-32);
- Benzo(a)pyrene (CCMW-36); and,
- Benzo(b)fluoranthene (CCMW-36).

To mitigate the ground-water ingestion exposure pathway, Village of Lyons' ordinance (No. 5-18-99-3) restricts the use of ground water as potable water[27] and the Village of Lyons' MOU with the IEPA prohibits the use of ground-water as a potable water supply.

5.3 De Minimis Conditions

The following *de minimis* condition was identified in association with the Subject Property:

De Minimis	**COC(s)**
• *Former fuel station on the northeast portion of the Subject Property*	• *BTEX, PAHs*

5.3.1 Exposure Routes

Evaluation of the data collected at the Subject Property and the review of Subpart C, Section 742.300 – Exclusion of Exposure Routes (inhalation, soil and ground water ingestion) indicate that the former fuel station property has obtained a NFR for the leaking USTs based upon the following conditions as indicated in the DAI CACR Amendment:

- The ground-water exposure route and the soil component of the ground-water ingestion pathway "should be excluded due to the Village of Lyons ground-water ordinance (No. 5-18-99-3)";

- "Ground-water contamination and residual soil contamination migrating from soil to ground-water will have attenuated below levels below the Tier 1 ground-water ROs before encountering

[26] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf
[27] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling"; and,

- The remaining "contamination above Tier 1 industrial/commercial soil ROs for the soil inhalation and ingestion exposure pathways has been covered by an engineered barrier"

5.4 Nature, Concentration and Extent of COCs

Based on the review of previous investigations at the Subject Property, below are the COCs identified at the Subject Property:

RECs	COC(s)
• *Historical Asphalt Plant Area and Underground Diesel Pipe Release located in the west portion of the Subject Property and within the former filled-in quarry*	• *VOCs, PAHs, RCRA metals*
• *Former Pond located in the north-northeast portion of the Subject Property and near the edge of the northeast boundary of the former filled-in quarry;*	• *VOCs, PAHs, RCRA metals*
• *Former Quarry and Former CCDD Fill Operation in the central and western portions of the Subject Property;*	• *VOCs, PAHs, RCRA metals*

The extent of COCs has not yet been defined.

5.5 Physical Features of the Subject Property Affecting Potential COC Migration

Physical features of the Subject Property affecting potential COC migration consist of the following:

- The entire Subject Property is in the process of being redeveloped for commercial, municipal, and recreational use. The Subject Property will be covered with buildings and associated asphalt and concrete paved surfaces, which will act as an engineered barrier mitigating infiltration of precipitation and the resulting potential migration of COCs through the on site soil. Additionally, a clay cap will cover the recreational use area in the central portion of the Subject Property;

- The native clay soil beneath the Subject Property exhibits low hydraulic conductivities and is likely mitigating the horizontal and vertical migration of COCs; and,

- No sensitive receptors (i.e., private drinking water wells) were identified on site.

5.6 COC Comparison with IEPA Tier 1 Industrial/Commercial Remediation Objectives or Applicable Background Levels

Tabular summaries of the COCs detected in soil and ground water at the Subject Property exceeding IEPA Tier I Soil RO for the industrial/commercial inhalation exposure pathway and Class I and Class II ground-water ROs are provided in Tables 1-5, 7, 8, 10, 13, and 14. It should be noted, that no soil or ground-water samples have been collected in the proposed recreational use area.

6.0 CONCLUSIONS

The Village of Lyons intends to redevelop the Subject Property as mixed-use including commercial, municipal, and recreational. More specifically, the current proposed development at the Subject Property is as follows:

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the former quarried portion of the Subject Property;

- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,

- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be south of the former quarried portion of the Subject Property.

As such,

- The proposed commercial buildings and asphalt parking lots in the commercial development will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil;
- The proposed recreational use and green space areas will be covered with a compacted clay cap that will act as an engineered barrier to eliminate both the ingestion and inhalation exposure pathways. However, current modeling suggests that no inhalation risk exists in outdoor areas at the Subject Property; and,
- The proposed community center building and asphalt parking lots in the southeast portion of the Subject Property will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil. In addition, a vapor barrier membrane and passive vent system beneath the proposed community center is planned at this time. Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village

of Lyons". Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons." Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

However, BB&J also recommends additional sampling of the soil and ground-water sampling at the Subject Property, particularly in the following areas:

- Historical Asphalt Plant Area and Underground Diesel Pipe Release located in the west portion of the Subject Property and within the former filled-in quarry; and,

- Former Quarry, Former CCDD Fill Operation, and Former Pond located in the central, western, and northern portions of the Subject Property.

Furthermore, additional sampling of the soil is required within areas of proposed landscaped areas and utility conduits. BB&J will submit a conceptual work plan to the IEPA SRP to address these additional sampling requirements. Nevertheless, due to the proposed engineered barriers at the Subject Property, it is BB&J's opinion that subsurface investigations beyond those recommended in the Conceptual Work Plan are not required.

7.0 STATEMENT OF LICENSED PROFESSIONAL ENGINEER

I attest that this document and all Appendices were reviewed by me, and, to the best of my knowledge and belief, the work described in this Site Investigation Report has been completed in accordance with the Act, 35 IAC 740 and generally accepted engineering practices, and the information presented is accurate and complete.

_____ _____

David Mursch, P.E. Date
Illinois Professional Engineer License No. 062-043951

TABLES

Table 1: Summary of AE Report Soil and Grab Sample Laboratory Analytical Results[1]

						Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
						Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**F-1 (mg/kg)**	**W-1N (mg/kg)**	**W-1S (mg/kg)**	**W-1E (mg/kg)**	**W-1W (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**(mg/kg)**
BETX (USEPA Method 8020)												
Benzene	<0.2	*0.089*	<0.2	<1.0	<0.05	100	1.6	2,300	2.2	0.03	0.17	NA
Ethylbenzene	5.5	0.67	0.8	12	0.21	200,000	400	20,000	58	13	19	NA
Toluene	1.6	0.095	<0.2	1.7	0.071	410,000	650	410,000	42	12	29	NA
Xylenes, Total	12	1.3	1.1	**39**	0.7	410,000	320	41,000	5.6	150	150	NA
PAHs (USEPA Method 8310)												
Acenaphthene	<0.67	<1.2	1.6	4.1	<1.2	120,000	NRO	120,000	NRO	570	2,900	0.13
Acenaphthylene	<17	<1.7	<17	<17	<8.5	NRO	NRO	NRO	NRO	NRO	NRO	0.07
Anthracene	<0.66	<0.66	<0.66	<0.66	<0.66	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	0.78	0.022	0.32	0.41	0.92	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	0.51	0.023	0.079	<0.067	**1.2**	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	0.56	<0.033	<0.33	<0.33	1.1	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	0.38	0.027	0.069	<0.067	0.65	78	NRO	1,700	NRO	49	250	1.70
Benzo(ghi)perylene	<0.67	<0.067	<0.67	<0.67	0.35	NRO	NRO	NRO	NRO	NRO	NRO	1.70
Chrysene	0.73	<0.1	<0.33	0.62	1.2	780	NRO	17,000	NRO	160	800	2.70
Dibenzo(a,h)anthracene	0.11	0.021	<0.067	0.13	<0.034	0.8	NRO	17	NRO	2	7.6	0.42
Fluoranthene	5	<0.66	14	32	2.6	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Fluorene	<0.14	<0.14	2.4	7.3	<0.14	82,000	NRO	82,000	NRO	560	2,800	0.18
Ideno(1,2,3-cd)pyrene	0.78	<0.067	<0.67	<0.67	1.1	8	NRO	170	NRO	14	69	1.6
Napthalene	**1.9**	<0.66	<0.67	***13***	<0.66	41,000	270	4,100	1.8	12	18	0.2
Phenanthrene	1.5	<0.66	5	16	<0.66	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	1.6	<0.18	1.2	2.3	1.3	61,000	NRO	61,000	NRO	4,200	21,000	3.0

Notes:

[1] *Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc. (AE), for Palumbo Bros., Inc., dated December 7, 1993 (AE Report), Appendix D.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.
[3] Title 35 IAC 742, Appendix B, Tables B.
[4] Title 35 IAC 742, Appendix A, Table H.
[**39**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*0.089*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[***13*** Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs AND of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.2] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, and xylene
IEPA - Illinois Environmental Protection Agency
NRO - No ROs established by the IEPA available for the route of exposure
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TACO - Tiered Approach Corrective Action Objectives
USEPA - United States Environmental Protection Agency

Grab Samples From Historic Asphalt Plant Anlytical Results

			Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[1]	
Sample ID	**Diesel Standard Sample #1 (mg/L)**	**Ponded Area Sample #2 (mg/L)**	**Class I (mg/L)**	**Class II (mg/L)**
TPH	930,000	790,000	NRO	NRO

Notes:

[1] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E.

Acronyms:

mg/L - milligrams per liter
NRO - No Remediation Objective
RO - Remediation Objectives
TPH - Total petroleum hydrocarbons

Prepared By: MLH / 09.15.07
Checked By: AWB / 09.21.07

Table 2: Summary of DAI Phase II ESA Soil Laboratory Analytical Results[1]

										Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
										Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**B-1 (mg/kg)**	**B-2 (mg/kg)**	**B-4 (mg/kg)**	**B-5B (mg/kg)**	**B-6 (mg/kg)**	**B-7 (mg/kg)**	**B-9 (mg/kg)**	**B-10 (mg/kg)**	**B-11 (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**(mg/kg)**
BETX (USEPA Method 8020)																
Benzene	<0.002	*1.3*	*1.54*	<0.2	<0.002	<0.002	<0.002	*0.0863*	<0.002	100	1.6	2,300	2.2	0.03	0.17	NA
Ethylbenzene	0.00218	1.65	3.92	*15*	<0.002	<0.002	0.00518	<0.002	<0.002	200,000	400	20,000	58	13	19	NA
Toluene	0.00447	0.336	3.37	<0.2	<0.002	<0.002	<0.002	<0.002	<0.002	410,000	650	410,000	42	12	29	NA
m, p-Xylenes	0.00516	2.88	13.8	27.0	0.00322	<0.003	0.0173	0.00892	<0.003	NA	NA	NA	NA	NA	NA	NA
o-Xylene	0.0032	1.24	4.57	10.6	<0.003	<0.003	0.00622	<0.003	<0.003	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8310)																
Acenaphthene	<0.66	1.13	0.98	2.2	<0.66	<0.66	<0.66	<0.66	<0.66	120,000	NRO	120,000	NRO	570	2,900	0.13
Acenaphthylene	<0.66	2.84	2.45	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	NRO	NRO	NRO	NRO	NRO	NRO	0.07
Benzo(a)anthracene	0.0302	<0.00871	<0.00871	<0.00871	0.025	<0.00871	0.213	<0.00871	<0.00871	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	<0.0154	<0.0154	<<0.0154	<0.0154	<0.0154	<0.0154	**4.34**	<0.0154	<0.0154	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	0.0747	0.0381	0.0421	<0.0121	0.0947	<0.0121	0.638	0.0507	<0.0121	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	0.0156	<0.0114	<0.0114	<0.0114	0.05	<0.0114	0.596	<0.0114	<0.0114	78	NRO	1,700	NRO	49	250	1.7
Benzo(g,h,i)perylene	<0.0509	<0.0509	<0.0509	<0.0509	<0.059	<0.059	0.479	<0.059	<0.059	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Chrysene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.97	<0.1	<0.1	780	NRO	17,000	NRO	160	800	2.7
Dibenzo(a,h)anthracene	0.0375	<0.0201	0.037	<0.0201	0.0955	<0.0201	**1.55**	<0.0201	<0.0201	0.8	NRO	17	NRO	2	7.6	0.42
Fluorene	<0.14	0.644	<0.14	0.244	<0.14	<0.14	0.226	<0.14	<0.14	82,000	NRO	82,000	NRO	560	2,800	0.18
Ideno(1,2,3-cd)pyrene	<0.0288	<0.0288	<0.0288	<0.0288	0.0326	<0.0288	0.491	<0.0288	<0.0288	8	NRO	170	NRO	14	69	1.6
Pyrene	0.274	<0.18	<0.18	<0.18	<0.18	<0.18	1.78	<0.18	<0.18	61,000	NRO	61,000	NRO	4,200	21,000	3.0

Notes:

[1] *Corrective Action Completion Report (CACR) Amendment, LPC# 0311715020 – Cook County, Materials Service Corporation (MSC) – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, Leaking Underground Storage Tank (LUST) Incident# 951401* , prepared by DAI Environmental, Inc. (DAI) for MSC, dated February 4, 2004 (DAI CACR Amendment), Table 1. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI CACR.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.
[3] Title 35 IAC 742, Appendix B, Table B.
[4] Title 35 IAC 742, Appendix A, Table H.
[**4.34**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*1.3*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.002] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, xylene
IEPA - Illinois Environmental Protection Agency
mg/kg - Milligram per kilogram

NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TACO - Tiered Approach Corrective Action Objectives
USEPA - United States Envrionmental Protection Agency

Prepared By: HJZ / 10.22.07
Checked By: AWB / 10.22.07

Table 3: Summary of Additional DAI Phase II ESA Soil Laboratory Analytical Results[1]

									Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
									Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**SB-1-1**	**SB-1-2**	**SB-1-3**	**SB-2-1**	**SB-2-2**	**SB-3-1**	**SB-3-2**	**SB-3-3**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
VOCs (USEPA Method 8260)															
1,2,4-Trimethylbenzene	<0.0126	0.225	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.015	NRO	NRO	NRO	NRO	NRO	NRO	NA
Napthalene	<0.0126	**1.83**	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.015	41,000	270	4,100	1.8	12	18	NA
Xylenes, Total	<0.0126	0.094	<0.0148	<0.0114	0.0527	<0.0112	<0.0119	<0.015	410,000	320	41,000	5.6	150	150	NA
PAHs (USEPA Method 8310)															
Anthracene	<0.0412	<0.0368	0.356	<0.037	<0.037	<0.0364	<0.0389	<0.0489	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	0.0821	0.0415	1.47	<0.003	<0.003	<0.0029	<0.0031	<0.0039	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	0.1430	0.0938	**1.62**	<0.005	<0.005	<0.004	<0.005	<0.006	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	0.1590	0.0858	1.99	<0.0041	<0.0041	<0.004	<0.0043	<0.0054	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	0.1120	0.0689	1.24	<0.0305	<0.0039	<0.0031	<0.0041	<0.0051	78	NRO	1,700	NRO	49	250	1.7
Benzo(g,h,i)perylene	0.1780	0.1290	1.61	<0.0039	<0.0305	<0.03	<0.0321	<0.0603	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Chrysene	0.0758	0.0395	1.04	<0.003	<0.002	<0.003	<0.004	<0.004	780	NRO	17,000	NRO	160	800	2.7
Dibenzo(a,h)anthracene	0.2470	0.1880	**1.95**	<0.007	<0.007	<0.007	<0.007	<0.005	0.8	NRO	17	NRO	2	7.6	0.42
Fluoranthene	0.1120	0.0734	2.82	<0.0313	<0.0313	<0.0304	<0.033	<0.0414	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Indeno(1,2,3-cd)pyrene	0.9520	0.6420	1.13	<0.0098	<0.0098	<0.0096	<0.0103	<0.0129	8	NRO	170	NRO	14	69	1.6
Phenanthrene	<0.0378	<0.0338	0.693	<0.0359	<0.0359	<0.0334	<0.0357	<0.0448	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	0.1580	0.0791	2.99	<0.0608	<0.0608	<0.0598	<0.064	<0.0804	61,000	NRO	61,000	NRO	4,200	21,000	3.0
TCLP Lead	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	
(USEPA Method 6010B)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NA	NA	NA	NA	0.0075	0.1	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.

[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.

[3] Title 35 IAC 742, Appendix B, Table B.

[4] Title 35 IAC 742, Appendix A, Table H.

[5] Soil boring depths are presented in feet below ground surface (bgs).

[**1.83**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.

[<0.0126] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

IEPA - Illinois Environmental Protection Agency
mg/kg - Milligram per kilogram
mg/L - Milligram per liter
NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TCLP - Toxic Characteristic Leaching Procedure
USEPA - United States Envrionmental Protection Agency
VOC - Volatile organic compound

Prepared By: HJZ / 10.22.07
Checked By: AWB / 10.22.07

Table 3: Summary of Additional DAI Phase II ESA Soil Laboratory Analytical Results[1]

									Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
									Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**SB-4-1**	**SB-4-2**	**SB-4-3**	**SB-5-1**	**SB-5-2**	**SB-5-3**	**SB-6-1**	**SB-6-2**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
VOCs (USEPA Method 8260)	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8310)															
Anthracene	<0.0481	<0.0374	<0.038	<0.0391	<0.0388	<0.0384	1.74	2.24	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	<0.0038	<0.0030	<0.003	<0.0031	<0.0031	<0.0031	*3.56*	*4.8*	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	**2.26**	**2.71**	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	<0.0053	<0.0041	<0.0042	<0.0043	<0.0043	<0.0042	2.6	3.25	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	<0.0050	<0.0038	<0.004	<0.0041	<0.004	<0.0040	1.72	2.16	78	NRO	1,700	NRO	49	250	1.7
Benzo(g,h,i)perylene	<0.0397	<0.0309	<0.314	<0.0323	<0.032	<0.0316	1.25	1.84	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Chrysene	<0.004	<0.003	<0.003	<0.004	<0.004	<0.004	2.45	3.18	780	NRO	17,000	NRO	160	800	2.7
Dibenzo(a,h)anthracene	<0.009	<0.007	<0.007	<0.007	<0.007	<0.007	**1.79**	***2.74***	0.8	NRO	17	NRO	2	7.6	0.42
Fluoranthene	<0.407	<0.03117	<0.0322	<0.0331	<0.0328	<0.0646	8.8	12	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Indeno(1,2,3-cd)pyrene	<0.0127	<0.0089	<0.01	<0.0103	<0.0102	<0.0101	**12.5**	**13.9**	8	NRO	170	NRO	14	69	1.6
Phenanthrene	<0.0441	<0.0343	<0.0346	<0.0359	<0.0356	<<0.0352	4.58	6.17	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	<0.0791	<0.0615	<0.0625	<0.0643	<0.0637	<0.0631	8.2	11.1	61,000	NRO	61,000	NRO	4,200	21,000	3.0
TCLP Lead	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	
(USEPA Method 6010B)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NA	NA	NA	NA	0.0075	0.1	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020,* prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.

[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.

[3] Title 35 IAC 742, Appendix B, Table B.

[4] Title 35 IAC 742, Appendix A, Table H.

[5] Soil boring depths are presented in feet below ground surface (bgs).

[**2.26**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.

[*3.56*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.

[***2.74***] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs AND of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.

[<0.0481] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

IEPA - Illinois Environmental Protection Agency
mg/kg - Milligram per kilogram
mg/L - Milligram per liter
NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TACO - Tiered Approach Corrective Action Objectives
TCLP - Toxic Characteristic Leaching Procedure
USEPA - United States Envrionmental Protection Agency
VOC - Volatile organic compound

Prepared By: HJZ / 10.22.07
Checked By: AWB / 10.22.07

Table 3: Summary of Additional DAI Phase II ESA Soil Laboratory Analytical Results[1]

									Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
									Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**SB-7-1**	**SB-7-2**	**SB-8-1**	**SB-8-2**	**SB-8-3**	**SB-9-1**	**SB-9-2**	**SB-9-3**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg) (0-2)**	**(mg/kg) (4-6)**	**(mg/kg) (8-10)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
VOCs (USEPA Method 8260)															
n-Butylbenzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.852	<0.0108	<0.0119	NRO	NRO	NRO	NRO	NRO	NRO	NA
sec-Butylbenzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.19	0.562	<0.0119	NRO	NRO	NRO	NRO	NRO	NRO	NA
Ethylbenzene	<0.0128	<0.0115	<0.0112	0.078	<0.0121	<0.287	7.87	1.02	200,000	400	20,000	58	13	19	NA
Toluene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.087	0.356	<0.0119	410,000	650	410,000	42	12	29	NA
1,2,4-Trimethylbenzene	0.011	<0.0115	<0.0112	<0.0123	<0.0121	0.116	21.6	0.453	NRO	NRO	NRO	NRO	NRO	NRO	NA
1,3,5-Trimethylbenzene	0.017	<0.0115	<0.0112	<0.0123	<0.0121	0.185	25.2	0.748	NRO	NRO	NRO	NRO	NRO	NRO	NA
Isopropylbenzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	1.002	2.57	0.172	NRO	NRO	NRO	NRO	NRO	NRO	NA
p-Isopropyltoluene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.121	1.94	<0.0119	NRO	NRO	NRO	NRO	NRO	NRO	NA
n-Propylbenzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	3.25	<0.0108	<0.0119	NRO	NRO	NRO	NRO	NRO	NRO	NA
Napthalene	0.2990	<0.0115	<0.0112	<0.0123	<0.0121	0.538	1.49	0.213	41,000	270	4,100	1.8	12	18	NA
Xylenes, Total	<0.0128	<0.0115	<0.0112	0.075	<0.0121	0.195	**6.54**	2.32	410,000	320	41,000	5.6	150	150	NA
PAHs (USEPA Method 8310)															
Acenaphthene	<0.054	<0.048	<0.047	<0.051	<0.051	0.158	0.646	<0.05	120,000	NRO	120,000	NRO	570	2,900	0.13
Acenaphthylene	<0.0803	<0.072	<0.0703	<0.0767	<0.076	0.281	0.632	<0.0748	NRO	NRO	NRO	NRO	NRO	NRO	0.07
Anthracene	0.0449	<0.0375	<0.0366	0.0874	0.206	<0.0378	0.0368	<0.0389	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	0.15	0.0552	0.0087	0.102	0.411	0.0209	0.418	0.0514	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	0.154	0.12	0.0056	0.0907	0.275	0.022	0.246	**0.836**	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	0.16	0.0967	0.0056	0.0968	0.359	0.0174	0.297	0.0836	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	0.208	0.069	0.0056	0.065	0.205	0.0128	0.395	0.0645	78	NRO	1,700	NRO	49	250	1.7
Benzo(g,h,i)perylene	0.229	0.119	<0.0302	0.0895	0.187	<0.0312	0.423	0.116	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Chrysene	0.0872	0.0518	0.0067	0.723	0.312	0.0139	0.141	0.0442	780	NRO	17,000	NRO	160	800	2.7
Dibenzo(a,h)anthracene	0.323	0.199	<0.007	0.119	0.216	0.0081	**1.35**	0.143	0.8	NRO	17	NRO	2	7.6	0.42
Fluoranthene	0.247	0.0771	<0.031	0.243	0.962	<0.032	0.786	0.08	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Fluorene	<0.0704	<0.0632	<0.0617	<0.0673	<0.0666	<0.0637	0.445	<0.0656	82,000	NRO	82,000	NRO	560	2,800	0.18
Indeno(1,2,3-cd)pyrene	0.837	0.429	<0.0097	0.567	1.75	0.036	1.5	0.594	8	NRO	170	NRO	14	69	1.6
Naphthalene	<0.032	<0.029	<0.028	<0.031	<0.030	0.328	0.514	<0.03	41,000	270	4,100	1.8	12	18	0.2
Phenanthrene	0.196	<0.0344	<0.0336	0.126	0.476	<0.0347	0.371	<0.0357	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	0.295	0.104	<0.0602	0.235	0.915	<0.0622	0.559	0.093	61,000	NRO	61,000	NRO	4,200	21,000	3.0
TCLP Lead	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	
(USEPA Method 6010B)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	*0.0319*	<0.004	NA	NA	NA	NA	0.0075	0.1	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020,* prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.
[3] Title 35 IAC 742, Appendix B, Table B.
[4] Title 35 IAC 742, Appendix A, Table H.
[5] Soil boring depths are presented in feet below ground surface (bgs).
[**6.54**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*0.0319*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.0128] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

IEPA - Illinois Environmental Protection Agency
mg/kg - Milligram per kilogram
mg/L - Milligram per liter
NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TACO - Tiered Approach Corrective Action Objectives
TCLP - Toxic Characteristic Leaching Procedure
USEPA - United States Envrionmental Protection Agency
VOC - Volatile organic compound

Prepared By: HJZ / 10.01.07
Checked By: AWB / 10.01.07

Table 3: Summary of Additional DAI Phase II ESA Soil Laboratory Analytical Results[1]

									Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
									Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**SB-10**	**SB-10**	**SB-11**	**SB-11**	**SB-12**	**SB-12**	**SB-13**	**SB-13**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
BETX (USEPA Method 8021B)	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8310)															
Anthracene	0.563	0.007	<0.0466	0.004	<0.0401	<0.0372	<0.0368	<0.0394	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	*2.059*	0.011	<0.00372	0.009	<0.0032	<0.00296	<0.00294	<0.00315	8	NRO	170	NRO	2	8	1.8
Benzo(a)pyrene	**1.572**	<0.00476	<0.00572	0.007	<0.0492	<0.00456	<0.00452	<0.00484	0.8	NRO	17	NRO	8	82	2.1
Benzo(b)fluoranthene	1.952	0.009	<0.00515	0.009	<0.00443	<0.0041	<0.00407	<0.00438	8	NRO	170	NRO	5	25	2.1
Benzo(k)fluoranthene	1.008	0.004	<0.00486	0.004	<0.00418	<0.00388	<0.00384	<0.00411	78	NRO	1,700	NRO	49	250	1.7
Benzo(g,h,i)perylene	1.339	<0.032	<0.0385	<0.032	<0.0331	<0.0307	<0.0304	<0.0325	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Chrysene	2.146	0.007	<0.00429	0.007	<0.00369	<0.00342	<0.00339	<0.00363	780	NRO	17,000	NRO	160	800	2.7
Dibenzo(a,h)anthracene	**1.163**	<0.00714	<0.00858	<0.00714	<0.00738	<0.0684	<0.00578	<0.00726	0.8	NRO	17	NRO	2	7.6	0.42
Fluoranthene	6.507	0.019	<0.0395	0.025	<0.0339	<0.0315	<0.0312	<0.0334	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Indeno(1,2,3-cd)pyrene	1.18	<0.0102	<0.0123	<0.0102	<0.0106	<0.0098	<<0.00972	<0.0104	8	NRO	170	NRO	14	69	1.6
Phenanthrene	3.444	0.017	<0.0428	0.011	<0.0368	<0.0341	<0.0338	<0.0362	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	<6.88	0.013	<0.0766	0.015	<0.0659	<0.0611	<0.0606	<0.0649	61,000	NRO	61,000	NRO	4,200	21,000	3.0
TCLP Lead	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	
(USEPA Method 6010B)	<0.004	0.006	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NA	NA	NA	NA	0.0075	0.1	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.

[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.

[3] Title 35 IAC 742, Appendix B, Table B.

[4] Title 35 IAC 742, Appendix A, Table H.

[5] Soil boring depths are presented in feet below ground surface (bgs).

[**1.572**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.

[<0.0128] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, xylene
IEPA - Illinois Environmental Protection Agency

mg/kg - Milligram per kilogram
mg/L - Milligram per liter
NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TCLP - Toxic Characteristic Leaching Procedure
USEPA - United States Envrionmental Protection Agency

Prepared By: HJZ / 10.22.07
Checked By: AWB / 10.22.07

Table 3: Summary of Additional DAI Phase II ESA Soil Laboratory Analytical Results[1]

					Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
					Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**SB-14**	**SB-14**	**SB-15**	**SB-15**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg) (1-3)**	**(mg/kg) (8-10)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
BETX (USEPA Method 8021B)	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8310)											
Anthracene	<0.124	<0.137	0.015	<0.13	610,000	NRO	610,000	NRO	12,000	59,000	0.4
Benzo(a)anthracene	<0.00988	<0.0109	0.061	<0.0140	8	NRO	170	NRO	2	8	1.8
Benzo(g,h,i)perylene	<0.102	<0.113	0.082	<0.108	NRO	NRO	NRO	NRO	NRO	NRO	1.7
Fluoranthene	<0.105	<0.116	0.152	<0.11	82,000	NRO	82,000	NRO	4,300	21,000	4.1
Phenanthrene	<0.114	<0.126	0.051	<0.12	NRO	NRO	NRO	NRO	NRO	NRO	2.5
Pyrene	<0.204	<0.225	0.165	<0.214	61,000	NRO	61,000	NRO	4,200	21,000	3.0
TCLP Lead	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	
(USEPA Method 6010B)	<0.004	*3.62*	<0.004	<0.004	NA	NA	NA	NA	0.0075	0.1	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.

[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.

[3] Title 35 IAC 742, Appendix B, Table B.

[4] Title 35 IAC 742, Appendix A, Table H.

[5] Soil boring depths are presented in feet below ground surface (bgs).

[*3.62*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.

[<0.124] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, xylene
IEPA - Illinois Environmental Protection Agency

mg/kg - Milligram per kilogram
mg/L - Milligram per liter
NA - Not applicable
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
TCLP - Toxic Characteristic Leaching Procedure
USEPA - United States Envrionmental Protection Agency

Prepared By: HJZ / 10.22.07
Checked By: AWB / 10.22.07

Table 4: Summary of Additional DAI Phase II ESA Ground-Water Laboratory Analytical Results[1]

				Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[2]	
Ground-Water ID	**MW1 (mg/L)**	**MW3 (mg/L)**	**MW4 (mg/L)**	**Class I (mg/L)**	**Class II (mg/L)**
BETX (USEPA Method 8021)	NS	ND	NS	NA	NA
VOCs (USEPA Method 8260)	ND	NS	ND	NA	NA
PAHs (USEPA Method 8310)	ND	ND	ND	NA	NA

Notes:

[1] *Attachments to Site Classification Completion Report / Corrective Action Completion Report (CACR), Lyons / Materials Service Corporation (MSC), 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI Environmental, Inc. (DAI) for MSC, dated July 29, 1999 (DAI Attachments to CACR), Appendix A. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.

[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E.

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, xylene
IEPA - Illinois Environmental Protection Agency
mg/L - milligrams per liter

NRO - No ROs established by the IEPA available for the route of exposure.
NS - Not sampled
PAH - Polynuclear aromatic hydrocarbon
RO - Remediation Objectives
TACO - Tiered Approach Corrective Action Objectives
USEPA - United States Envrionmental Protection Agency
VOC - Volatile organic compound

Prepared by: HJZ / 10.22.07
Checked by: AWB / 10.22.07

Table 5: Summary of DAI Adjoining Property Phase II ESA Soil Laboratory Analytical Results[1]

									Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		Background Concentration of PAHs in Background Soils (Metropolitan Areas)[4]
									Industrial-Commercial[3]		Construction Worker[3]				
Soil Sample ID	**B-16**	**B-16**	**B-17**	**B-17**	**B-18**	**B-18**	**B-19**	**B-19**	**Ingestion**	**Inhalation**	**Ingestion**	**Inhalation**	**Class I**	**Class II**	
Feet bgs[5]	**(mg/kg) (3-5)**	**(mg/kg) (5-7)**	**(mg/kg) (3-5)**	**(mg/kg) (5-7)**	**(mg/kg) (3-5)**	**(mg/kg) (5-7)**	**(mg/kg) (3-5)**	**(mg/kg) (5-7)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
BETX (USEPA Method 8021B)	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
PAHs (USEPA Method 8310)	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] *Corrective Action Completion Report (CACR) Amendment, LPC# 0311715020 – Cook County, Materials Service Corporation (MSC) – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, Leaking Underground Storage Tank (LUST) Incident# 951401*, prepared by DAI Environmental, Inc. (DAI) for MSC, dated February 4, 2004 (DAI CACR Amendment), Table 2. Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Analytical laboratory results are provided in the DAI Attachments to CACR.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B.
[3] Title 35 IAC 742, Appendix B, Table B.
[4] Title 35 IAC 742, Appendix A, Table H.
[5] Soil boring depths are presented in feet below ground surface (bgs).

Acronyms:

BTEX - Benzene, toluene, ethylbenzene, xylene
IEPA - Illinois Environmental Protection Agency

mg/kg - Milligram per kilogram
NRO - No ROs established by the IEPA available for the route of exposure.
PAH - Polyaromatic hydrocarbon
RO - Remediation Objective
USEPA - United States Envrionmental Protection Agency

Prepared By: HJZ / 10.01.07
Checked By: AWB / 10.01.07

Table 6: Summary of BB&J Phase II ESA: Commercial Development Soil Laboratory Analytical Results[1]

Soil Sample ID / Depth[7]	SB-3 (1.0-2.5) (mg/kg)	SB-3 (3.5-5) (mg/kg)	SB-3 (13.5-15) (mg/kg)	SB-5 Vicinity (0.0-1.0) (mg/kg)	SB-5 (3.5-5.0) (mg/kg)	SB-5 (6-7.5.0) (mg/kg)	SB-7 (1.0-2.5) (mg/kg)	SB-7 (6.0-7.5) (mg/kg)	SB-7 (58.5-60.0) (mg/kg)	SB-9 (1.0-2.5) (mg/kg)	SB-9 (6.0-7.5) (mg/kg)	SB-9 (18.5-20.0) (mg/kg)	SB-10 (6.0-7.5) (mg/kg)	SB-10 (8.5-10.0) (mg/kg)	SB-10 (18.5-20.0) (mg/kg)	SB-12 (1.0-2.5) (mg/kg)	SB-12 (8.5-10.0) (mg/kg)	SB-12 (13.5-15.0) (mg/kg)
pH	8.92	8.14	8.32	9.36	9.61	8.66	10.5	10.1	10.1	9.5	9.9	9.7	10.0	8.97	9.35	10.0	9.3	9.3
VOCs																		
Benzene	<0.005	<0.005	<0.005	<0.03	<0.03	<0.005	<0.005	*1.12*	<0.5	<0.005	<0.03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cis-1,2-dichloroethene	0.0107	<0.005	<0.005	<0.05	<0.05	<0.005	<0.005	<0.5	<0.5	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.05	<0.05	<0.005	<0.005	1.52	3.98	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	0.082	<0.05	<0.05	<0.005	<0.005	1.89	6.31	<0.005	<0.05	<0.005	<0.005	0.0088	<0.005	<0.005	<0.005	<0.005
Vinyl Chloride	<0.01	*0.0269*	<0.01	<0.05	<0.05	<0.01	<0.01	<0.5	<0.5	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylene, Total	<0.005	<0.005	0.056	<0.05	<0.05	<0.005	<0.005	**7.52**	**54.5**	<0.005	<0.05	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005
SVOCs																		
Acenaphthene	<0.33	0.381	<0.33	<1.65	<2.64	<0.33	<0.33	20.6	5.24	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Acenaphthylene	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	1.7	3.07	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Anthracene	<0.33	1.53	<0.33	2.8	<2.64	<0.33	<0.33	30.4	5.26	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)anthracene	<0.33	*2.27*	<0.33	*4.09*	<2.64	<0.33	0.464	***34.6***	1.25	0.372	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)pyrene	0.302	**2.39**	<0.09	**3.72**	2.05	<0.09	0.413	***35***	0.774	0.403	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Benzo(b)fluoranthene	0.339	2.03	<0.33	*5.05*	<2.64	<0.33	0.411	***29.8***	0.808	0.451	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluouranthene	<0.33	2.57	<0.33	3.02	<2.64	<0.33	0.388	26.7	<3.3	0.366	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(ghi)perylene	<0.33	1.17	<0.33	<1.65	<2.64	<0.33	<0.33	18.4	<3.3	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Carbazole	<0.33	0.476	<0.33	<1.65	<2.64	<0.33	<0.33	*20.8*	*3.25*	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Chrysene	0.340	2.58	<0.33	3.86	<2.64	<0.33	0.479	31	1.34	0.403	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	<0.09	0.5	<0.09	0.583	<2.64	<0.09	<0.09	***7.73***	<3.3	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Dibenzofuran	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	14.4	6.86	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4-Dimethylphenol	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	<3.3	7.13	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Fluoranthene	0.658	3.42	<0.33	8.59	3.69	<0.33	1.11	88.3	4.56	0.902	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Fluorene	<0.33	0.404	<0.33	1.98	<2.64	<0.33	<0.33	22.3	6.67	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Ideno(1,2,3-cd)pyrene	<0.33	1.2	<0.33	<1.65	<2.64	<0.33	<0.33	***18.9***	<3.3	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Methylnapthalene	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	13.9	33.8	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Methylphenol	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	<3.3	6.63	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
3 & 4-Methylphenol	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	<3.3	20.4	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Naphthalene	<0.33	0.546	<0.33	<1.65	**4.71**	<0.33	<0.33	***106***	***403***	<0.33	0.467	0.756	<0.33	<0.33	<0.33	1.29	1.46	<0.33
Phenanthrene	0.43	2.87	<0.33	8.64	<2.64	<0.33	0.774	114	14.2	0.57	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Phenol	<0.33	<0.33	<0.33	<1.65	<2.64	<0.33	<0.33	<3.3	7.74	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Pyrene	0.64	3.21	<0.33	6.84	3.49	<0.33	0.895	69	3.1	0.728	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
RCRA metals																		
Arsenic	7.1	5.9	***31***	5.0	1.8	7.7	3.2	6.6	6.6	2.4	0.9	4.4	2.6	4.9	1.5	3.9	6.0	3.9
Barium	40	49.4	44.6	32.5	15.2	51.4	35.3	40	21.6	14.6	3.1	6.5	27.2	55.3	3.7	25.1	11	3.2
Cadmium	0.8	1.0	1.0	0.4	0.3	0.6	0.2	0.7	0.2	0.2	<0.1	0.2	0.3	0.4	<0.1	0.5	0.4	0.2
Chromium	12.9	21.6	12	7.9	7.1	9.5	8.2	20.2	5.6	5.2	2.3	3.3	4.3	16.9	3.3	2.3	5.8	1.9
Lead	*138*	86.5	22	19.7	22.2	21.7	3.3	32.7	5.9	10.1	<0.2	2.9	6.1	10.8	1.2	11.9	5.2	2.4
Mercury	<0.05	**0.12**	<0.05	<0.05	<0.05	0.06	<0.05	**0.28**	**2.66**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09
Herbicides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organochloride Pesticides																		
4,4'-DDD	<0.016	0.0233	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
4,4'-DDE	0.0178	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
4,4'-DDT	<0.016	0.0298	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Soil Sample ID / Depth[7]	Exposure Route-Specific Values for Soil[2]: Industrial-Commercial[3] Ingestion (mg/kg)	Industrial-Commercial[3] Inhalation (mg/kg)	Construction Worker[3] Ingestion (mg/kg)	Construction Worker[3] Inhalation (mg/kg)	Soil Component of the Ground-Water Ingestion Exposure Route[3] Class I (mg/kg)	Class II (mg/kg)	pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route[4]: Ground-Water Migration pH range (7.75 to 8.24) Class I[8] (mg/kg)	Class II[9] (mg/kg)	Ground-Water Migration pH range (8.25 to 8.74) Class I[8] (mg/kg)	Class II[9] (mg/kg)	Ground-Water Migration pH range (8.75 to 9.0) Class I[8] (mg/kg)	Class II[9] (mg/kg)	Background Concentration of Chemicals[5, 6] (mg/kg)
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs													
Benzene	100	1.6	2,300	2.2	0.03	0.17	NA	NA	NA	NA	NA	NA	NA
Cis-1,2-dichloroethene	20,000	1,200	20,000	1,200	0.4	1.1	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	200,000	400	20,000	58	13	19	NA	NA	NA	NA	NA	NA	NA
Toluene	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	7.9	1.1	170	1.1	0.01	0.07	NA	NA	NA	NA	NA	NA	NA
Xylene, Total	410,000	320	41,000	5.6	150	150	NA	NA	NA	NA	NA	NA	NA
SVOCs													
Acenaphthene	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.13
Acenaphthylene	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.07
Anthracene	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	NA	NA	0.4
Benzo(a)anthracene	8.0	NRO	170	NRO	2.0	8.0	NA	NA	NA	NA	NA	NA	1.8
Benzo(a)pyrene	0.8	NRO	17	NRO	8.0	82	NA	NA	NA	NA	NA	NA	2.1
Benzo(b)fluoranthene	8.0	NRO	170	NRO	5.0	25	NA	NA	NA	NA	NA	NA	2.1
Benzo(k)fluouranthene	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	NA	NA	1.70
Benzo(ghi)perylene	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	1.70
Carbazole	290	NRO	6,200	NRO	0.6	2.8	NA	NA	NA	NA	NA	NA	NRO
Chrysene	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	0.8	NRO	17	NRO	2.0	7.6	NA	NA	NA	NA	NA	NA	0.42
Dibenzofuran	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
2,4-Dimethylphenol	41,000	NRO	41,000	NRO	9.0	9.0	NA	NA	NA	NA	NA	NA	NRO
Fluoranthene	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	NA	NA	4.1
Fluorene	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	NA	NA	0.18
Ideno(1,2,3-cd)pyrene	8.0	NRO	170	NRO	14	69	NA	NA	NA	NA	NA	NA	1.6
2-Methylnapthalene	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
2-Methylphenol	100,000	NRO	100,000	NRO	15	15	NA	NA	NA	NA	NA	NA	NRO
3 & 4-Methylphenol	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
Naphthalene	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	NA	NA	0.2
Phenanthrene	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	2.5
Phenol	610,000	NRO	61,000	NRO	100	100	NA	NA	NA	NA	NA	NA	NRO
Pyrene	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	NA	NA	3.0
RCRA metals													
Arsenic	13[10]	1200	61	25,000	NA	NA	30	120	31	120	32	130	13
Barium	140,000	910,000	14,000	870,000	NA	NA	1,800	1,801	2,100	2,100	NRO	NRO	110
Cadmium	2,000	2,800	200	59,000	NA	NA	59	590	430	4,300	NRO	NRO	0.6
Chromium	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	NRO	NRO	16.2
Lead	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	107	1,420	36
Mercury	610	16	61	0.1	NA	NA	6.4	32	8.0	40	NRO	NRO	0.06
Herbicides	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides													
4,4'-DDD	24	NRO	520	NRO	16	80	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	17	NRO	370	NRO	54	270	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	17	1,500	100	2,100	32	160	NA	NA	NA	NA	NA	NA	NA
PCBs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Complete analytical laboratory results are provided in the Appendices of the Comprehensive Site Investigation Report.
[2] Title 35 IAC 742, Appendix B.
[3] Title 35 IAC 742, Appendix B, Table B.
[4] pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH values between 4.5 and 9.0.
[5] Title 35 IAC 742, Appendix A, Table G.
[6] Title 35 IAC 742, Appendix A, Table H.
[7] Soil boring depths are presented in feet bgs.
[8] Title 35 IAC 742, Appendix B, Table C.
[9] Title 35 IAC 742, Appendix B, Table D.
[10] The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
[**7.52**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*1.12*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[***34.6***] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs AND of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.33] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No ROs established by the IEPA available for the route of exposure.
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
TACO - Tiered Approach Corrective Action Objectives
VOC - Volatile organic compounds

Prepared by: KAB / 10.22.07
Checked by: AWB / 10.22.07

Table 7: Summary of BB&J Phase II ESA: Commercial Development Ground-Water Laboratory Analytical Results[1]

					Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[2]	
Ground-Water ID	**MW-5**	**MW-9**	**MW-10**	**MW-12**	**Class I**	**Class II**
	(mg/L)	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**
pH @ 25°C	7.50	7.56	7.48	7.52	NA	NA
SVOCs (PAHs)						
Naphthalene	INS	ND	ND	0.011	0.14	0.22
VOCs	ND	ND	ND	ND	NA	NA
PCBs	INS	ND	ND	ND	NA	NA
RCRA Metals						
Arsenic	0.01	<0.002	<0.002	<0.002	0.05	0.2
Barium	0.239	0.101	0.097	0.095	2.0	2.0
Cadmium	*0.006*	<0.001	<0.001	<0.001	0.005	0.05
Chromium	0.006	0.002	0.005	0.010	0.1	1.0
Lead	<0.002	<0.002	*0.009*	*0.024*	0.0075	0.1
Herbicides	INS	ND	ND	ND	NA	NA
Pesticides	INS	ND	ND	ND	NA	NA

Notes:

[1] Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Complete analytical laboratory results are provided in the Appendices of the Comprehensive Site Investigation Report.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E.
[*0.006*] Indicates an exceedance of Class I Ground-water Component of the Ground-water Ingestion Route
[<] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

INS - Insufficient water available for analysis
mg/L - milligrams per liter
NA - Not applicable
ND - Not detected above laboratory reporting limits
NS - Not sampled
PAH - Polynuclear aromatic hydrocarbon
RCRA - Resource Conservation and Recovery Act
RO - Remediation Objectives
SVOC - Semivolatile organic compound
VOC - Volatile organic compound

Prepared by: KAB / 10.22.07
Checked by: AWB / 10.22.07

Table 8: Summary of BB&J Phase II ESA: Future Use Soil Laboratory Analytical Results[1]

				Exposure Route-Specific Values for Soil[2]				Soil Component of the Ground-Water Ingestion Exposure Route[3]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route [4, 5]						
				Industrial-Commercial[3]		Construction Worker[3]				Ground-water Migration pH range (7.25 to 7.74)		Ground-water Migration pH range (7.75 to 8.24)		Ground-water Migration pH range (8.25 to 8.74)		Background Concentration of Chemicals [6, 7]
Soil Sample ID / Depth[8]	**GP-1 (0.0-2.0) (mg/kg)**	**GP-2 (4.0-6.0) (mg/kg)**	**GP-3 (4.0-6.0) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**(mg/kg)**
pH	8.61	8.21	7.65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																
Acenaphthene	3.38	<0.33	<0.33	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.13
Anthracene	3.52	<0.33	<0.33	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	NA	NA	0.4
Benzo(a)anthracene	*2.63*	<0.33	<0.33	8.0	NRO	170	NRO	2.0	8.0	NA	NA	NA	NA	NA	NA	1.8
Benzo(a)pyrene	**2.72**	<0.09	<0.09	0.8	NRO	17	NRO	8.0	82	NA	NA	NA	NA	NA	NA	2.1
Benzo(b)fluoranthene	3.33	<0.33	<0.33	8.0	NRO	170	NRO	5.0	25	NA	NA	NA	NA	NA	NA	2.1
Benzo(k)fluouranthene	2.07	<0.33	<0.33	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	NA	NA	1.70
Benzo(ghi)perylene	1.31	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	1.70
Carbazole	*0.84*	<0.33	<0.33	290	NRO	6,200	NRO	0.6	2.8	NA	NA	NA	NA	NA	NA	NRO
Chrysene	3.98	<0.33	<0.33	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	0.57	<0.09	<0.09	0.8	NRO	17	NRO	2.0	7.6	NA	NA	NA	NA	NA	NA	0.42
Fluoranthene	3.48	<0.33	<0.33	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	NA	NA	4.1
Fluorene	0.48	<0.33	<0.33	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	NA	NA	0.180
Ideno(1,2,3-cd)pyrene	1.38	<0.33	<0.33	8.0	NRO	170	NRO	14	69	NA	NA	NA	NA	NA	NA	1.6
Naphthalene	0.36	<0.33	<0.33	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	NA	NA	0.2
Phenanthrene	1.77	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	2.5
Pyrene	4.21	<0.33	<0.33	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	NA	NA	3.0
RCRA metals																
Arsenic	3.10	8.2	7.0	13 [9]	1,200	61	25,000	NA	NA	30	120	31	120	32	130	13
Barium	28.3	125	85.6	140,000	910,000	14,000	870,000	NA	NA	1,800	1,801	2,100	2,100	NRO	NRO	110
Cadmium	0.6	125	0.7	2,000	2,800	200	59,000	NA	NA	59	590	430	4,300	NRO	NRO	0.6
Chromium	9.9	27.8	17.4	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	NRO	NRO	16.2
Lead	35.4	21.5	22	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	107	1,420	36
Mercury[10]	0.1	<0.05	**0.11**	610	16	61	0.1	NA	NA	6.4	32	8.0	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides / PCBs	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Complete analytical laboratory results are provided in the Appendices of the Comprehensive Site Investigation Report.
[2] Title 35 IAC 742, Appendix B..
[3] Title 35 IAC 742, Appendix B, Table B.
[4] Title 35 IAC 742, Appendix B, Table C.
[5] Title 35 IAC 742, Appendix B, Table D.
[6] Title 35 IAC 742, Appendix A, Table G.
[7] Title 35 IAC 742, Appendix A, Table H.
[8] Soil boring depths are presented in feet bgs.
[9] The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
[10] As indicated in Title 35 IAC 742, Appendix B, Table B, the value for Ingestion is based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). The value for Inhalation is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6).
[**2.72**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*1.12*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.33] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No ROs established by the IEPA available for the route of exposure.
PCB - Polychlorinated biphenyls
RCRA - Resource Conservation and Recovery Act
RO - Remediation Objective
SVOC - Semivolatile organic compound
TACO - Tiered Approach Corrective Action Objectives
VOC - Volatile organic compound

Prepared by: KAB / 10.22.07
Checked by: AWB / 10.22.07

Table 9: Summary of BB&J Phase II ESA: Community Center Soil Laboratory Analytical Results

							Exposure Route-Specific Values for Soil[1]				Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route[3]				
							Industrial-Commercial[2]		Construction Worker[2]				Ground-water Migration pH range (8.25 to 8.74)		Ground-water Migration pH range (8.75 to 9.0)		Background Concentration of Chemicals [4, 5]
Soil Sample ID / Depth[6]	**CCSB-31 (6-7.5) (mg/kg)**	**CCSB-31 (8.5-10) (mg/kg)**	**CCSB-32 (1-2.5) (mg/kg)**	**CCSB-32 (3.5-5) (mg/kg)**	**CCSB-33 (3.5-5) (mg/kg)**	**CCSB-33 (13.5-15) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I[7] (mg/kg)**	**Class II[8] (mg/kg)**	**Class I[7] (mg/kg)**	**Class II[8] (mg/kg)**	**(mg/kg)**
pH	8.81	8.64	9.15	8.94	9.81	9.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																	
Toluene	0.0063	<0.005	<0.05	<0.05	<0.005	<0.05	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA
Trichloroethene	<0.005	<0.005	<0.05	*0.125*	<0.005	<0.05	520	8.9	1,200	12	0.06	0.3	NA	NA	NA	NA	NA
SVOCs																	
Anthracene	<0.33	<0.33	0.943	0.855	<0.33	<0.33	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	0.4
Benzo(a)anthracene	<0.33	<0.33	0.981	1.920	<0.33	<0.33	8	NRO	170	NRO	2	8	NA	NA	NA	NA	1.8
Benzo(a)pyrene	<0.09	<0.09	**0.901**	**2.01**	<0.09	<0.09	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	2.1
Benzo(b)fluoranthene	<0.33	<0.33	0.879	2.43	<0.33	<0.33	8	NRO	170	NRO	5	25	NA	NA	NA	NA	2.1
Benzo(k)fluoranthene	<0.33	<0.33	0.890	1.29	<0.33	<0.33	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	1.70
Benzo(ghi)perylene	<0.33	<0.33	0.448	0.969	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	1.70
Carbazole	<0.33	<0.33	0.373	0.401	<0.33	<0.33	290	NRO	6,200	NRO	1	2.8	NA	NA	NA	NA	NRO
Chrysene	<0.33	<0.33	0.987	1.94	<0.33	<0.33	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	<0.09	<0.09	0.147	0.324	<0.09	<0.09	0.8	NRO	17	NRO	2	7.6	NA	NA	NA	NA	0.42
Fluoranthene	<0.33	<0.33	1.720	2.73	<0.33	<0.33	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	4.1
Fluorene	<0.33	<0.33	0.402	<0.33	<0.33	<0.33	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	0.18
Ideno(1,2,3-cd)pyrene	<0.33	<0.33	0.434	0.978	<0.33	<0.33	8	NRO	170	NRO	14	69	NA	NA	NA	NA	1.6
2-Methylnapthalene	<0.33	<0.33	<0.33	0.473	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NRO
Napthalene	<0.33	<0.33	**5.77**	**3.08**	<0.33	1.65	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	0.2
Phenanthrene	<0.33	<0.33	1.840	1.44	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	2.5
Pyrene	<0.33	<0.33	1.860	2.63	<0.33	<0.33	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	3.0
RCRA metals																	
Arsenic	2.1	10.8	10.1	10.6	6.2	2.8	13 [9]	1200	61	25,000	NA	NA	31	120	32	130	13
Barium	49.9	31.0	71.5	218	99.2	5.6	140,000	910,000	14,000	870,000	NA	NA	2,100	2,100	NRO	NRO	110
Cadmium	<0.1	0.4	0.3	3.1	0.4	0.1	2,000	2,800	200	59,000	NA	NA	430	4,300	NRO	NRO	0.6
Chromium	14.8	17.0	26.3	84.6	19.5	5.2	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	16.2
Lead	5.4	16.2	369	*121*	9.0	2.2	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	36
Silver	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	10,000	NRO	1,000	NRO	NA	NA	NRO	NRO	NRO	NRO	0.55
Mercury	<0.05	<0.05	<0.05	**0.2** [10]	<0.05	<0.05	610	16	61	0.1	NA	NA	8	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] Title 35 IAC 742, Appendix B.
[2] Title 35 IAC 742, Appendix B, Table B.
[3] pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH v
[4] Title 35 IAC 742, Appendix A, Table G.
[5] Title 35 IAC 742, Appendix A, Table H.
[6] Soil boring depths are presented in feet bgs.
[7] Title 35 IAC 742, Appendix B, Table C.
[8] Title 35 IAC 742, Appendix B, Table D.
[9] The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
[10] As indicated in Title 35 IAC 742, Appendix B, Table B, the value for Ingestion is based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). The value for Inhalation is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6).

[**0.901**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*0.125*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.005] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No ROs established by the IEPA
available for the route of exposure.
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
TACO - Tiered Approach Corrective Action Objectives
VOC - Volatile organic compounds

Table 9: Summary of BB&J Phase II ESA: Community Center

									Exposure Route-Specific Values for Soil[1]				Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route[3]				
									Industrial-Commercial[2]		Construction Worker[2]				Ground-water Migration pH range (8.25 to 8.74)		Ground-water Migration pH range (8.75 to 9.0)		Background Concentration of Chemicals [4, 5]
Soil Sample ID / Depth[6]	**CCSB-34 (6-7.5) (mg/kg)**	**CCSB-34 (18.5-20) (mg/kg)**	**CCSB-35 (1-5) (mg/kg)**	**CCSB-35 (13.5-15) (mg/kg)**	**CCSB-36 (3.5-5) (mg/kg)**	**CCSB-36 (13.5-15) (mg/kg)**	**CCSB-37 (3.5-5) (mg/kg)**	**CCSB-37 (13.5-15) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I[7] (mg/kg)**	**Class II[8] (mg/kg)**	**Class I[7] (mg/kg)**	**Class II[8] (mg/kg)**	**(mg/kg)**
pH	9.70	9.46	9.58	9.35	8.80	9.33	9.76	9.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																			
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0071	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA
SVOCs																			
Benzo(a)anthracene	<0.33	<0.33	0.505	<0.33	<0.33	<0.33	<0.33	<0.33	8	NRO	170	NRO	2	8	NA	NA	NA	NA	1.8
Benzo(a)pyrene	<0.09	<0.09	0.464	<0.09	0.259	<0.09	<0.09	<0.09	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	2.1
Benzo(b)fluoranthene	<0.33	<0.33	0.539	<0.33	<0.33	<0.33	<0.33	<0.33	8	NRO	170	NRO	5	25	NA	NA	NA	NA	2.1
Benzo(k)fluoranthene	<0.33	<0.33	0.428	<0.33	<0.33	<0.33	<0.33	<0.33	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	1.70
Bis(2-Ethylhexyl)phthalate	<0.33	<0.33	0.374	<0.33	<0.33	<0.33	<0.33	<0.33	410	31,000	4,100	31,000	3,600	31,000	NA	NA	NA	NA	NRO
Chrysene	<0.33	<0.33	0.534	<0.33	<0.33	<0.33	<0.33	<0.33	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	2.70
Fluoranthene	<0.33	<0.33	1.100	<0.33	0.448	<0.33	<0.33	<0.33	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	4.1
Napthalene	<0.33	<0.33	**4.52**	<0.33	<0.33	**2.36**	<0.33	<0.33	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	0.2
Phenanthrene	<0.33	<0.33	0.882	<0.33	<0.33	<0.33	<0.33	<0.33	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	2.5
Pyrene	<0.33	<0.33	1.02	<0.33	<0.33	<0.33	<0.33	<0.33	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	3.0
RCRA metals																			
Arsenic	**19.3**	4.7	2.4	3.5	5.8	2.2	10	2.4	13 [9]	1200	61	25,000	NA	NA	31	120	32	130	13
Barium	70.1	9.2	10.1	4.2	80.2	5.1	21.5	4.1	140,000	910,000	14,000	870,000	NA	NA	2,100	2,100	NRO	NRO	110
Cadmium	0.7	123	0.3	0.2	0.3	0.1	0.2	0.1	2,000	2,800	200	59,000	NA	NA	430	4,300	NRO	NRO	0.6
Chromium	17.3	4.7	12.9	2.9	18	3.2	9.3	3.3	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	16.2
Lead	20.7	3.7	16	2.7	10.8	1.9	8.0	1.9	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	36
Herbicides	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] Title 35 IAC 742, Appendix B.
[2] Title 35 IAC 742, Appendix B, Table B.
[3] pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH values between 4.5 and 9.0
[4] Title 35 IAC 742, Appendix A, Table G.
[5] Title 35 IAC 742, Appendix A, Table H.
[6] Soil boring depths are presented in feet bgs.
[7] Title 35 IAC 742, Appendix B, Table C.
[8] Title 35 IAC 742, Appendix B, Table D.
[9] The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
[**4.52**] Indicates an exceedance of Industrial-Commercial and/or Construction Worker TACO ROs.
[*0.125*] Indicates an exceednce of Class I and/or Class II Soil Component of Ground-water Ingestion Exposure Route TACO ROs.
[<0.005] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No ROs established by the IEPA available for the route of exposure.
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
TACO - Tiered Approach Corrective Action Objectives
VOC - Volatile organic compounds

Prepared By: MLH / 10.22.07
Checked By: AWB / 10.22.07

Table 10: Summary of BB&J Phase II ESA: Community Center[1]

				Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[2]	
Ground-Water ID	**CCMW-34** (mg/L)	**CCMW-35** (mg/L)	**CCMW-36** (mg/L)	**Class I** (mg/L)	**Class II** (mg/L)
pH @ 25°C	7.75	7.21	7.17	NA	NA
SVOCs (PAHs)					
Benzo(a)anthracene	<0.00013	<0.00013	*0.00032*	0.00013	0.00065
Benzo(a)pyrene	<0.0002	<0.0002	*0.0003*	0.0002	0.002
Benzo(b)fluoranthene	<0.00018	<0.00018	*0.00027*	0.00018	0.0009
Benzo(k)fluoranthene	<0.00017	<0.00017	*0.00031*	0.00017	0.00085
VOCs					
Vinyl Chloride	ND	*0.0287*	ND	0.002	0.01
PCBs	ND	ND	ND	NA	NA
RCRA Metals					
Arsenic	0.005	0.011	0.004	0.05	0.2
Barium	0.074	0.244	0.037	2.0	2.0
Chromium	0.001	0.003	0.002	0.1	1.0
Lead	<0.002	0.005	0.005	0.0075	0.1
Silver	0.002	<0.001	<0.001	0.05	NRO
Herbicides	ND	ND	ND	NA	NA
Pesticides	ND	ND	ND	NA	NA

Notes:

[1] Results are displayed for constituents detected in one or more location above laboratory reporting limits. Constituents not detected above laboratory reporting limits in at least one location are not listed. Complete analytical laboratory results are provided in the Appendices of the Comprehensive Site Investigation Report.
[2] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E.
[*0.0032*] Indicates an exceedance of Class I and/or Class II Ground-water Component of the Ground-water Ingestion Route
[<] Indicates that value was not detected above the laboratory detection limit.

Acronyms:

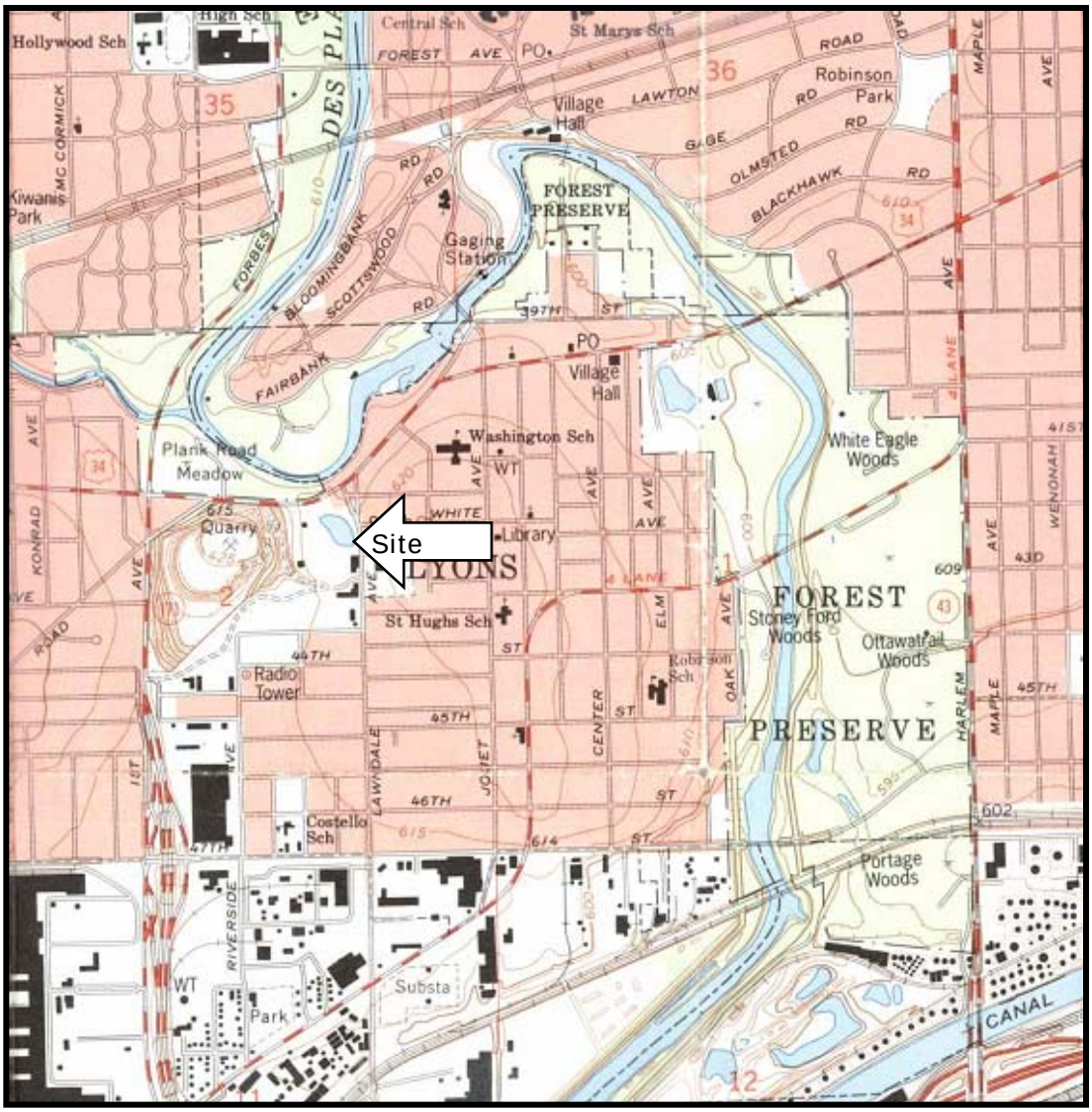
mg/L - milligrams per liter
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No Remediation Objective
PAH - Polynuclear aromatic hydrocarbon
RCRA - Resource Conservation and Recovery Act
RO - Remediation Objectives
SVOCs - Semivolatile organic compounds
VOC - Volatile organic compound

Prepared by: MLH / 09.17.07
Checked by: AWB / 09.17.07

FIGURES

Source: U.S. Geological Survey Quadrangle Berwyn, Illinois. 7.5 Minute Series (Topographic), Dated 1993.
T 38N
R 12E
S 2

N



0 1/4 1/2 1 MILE

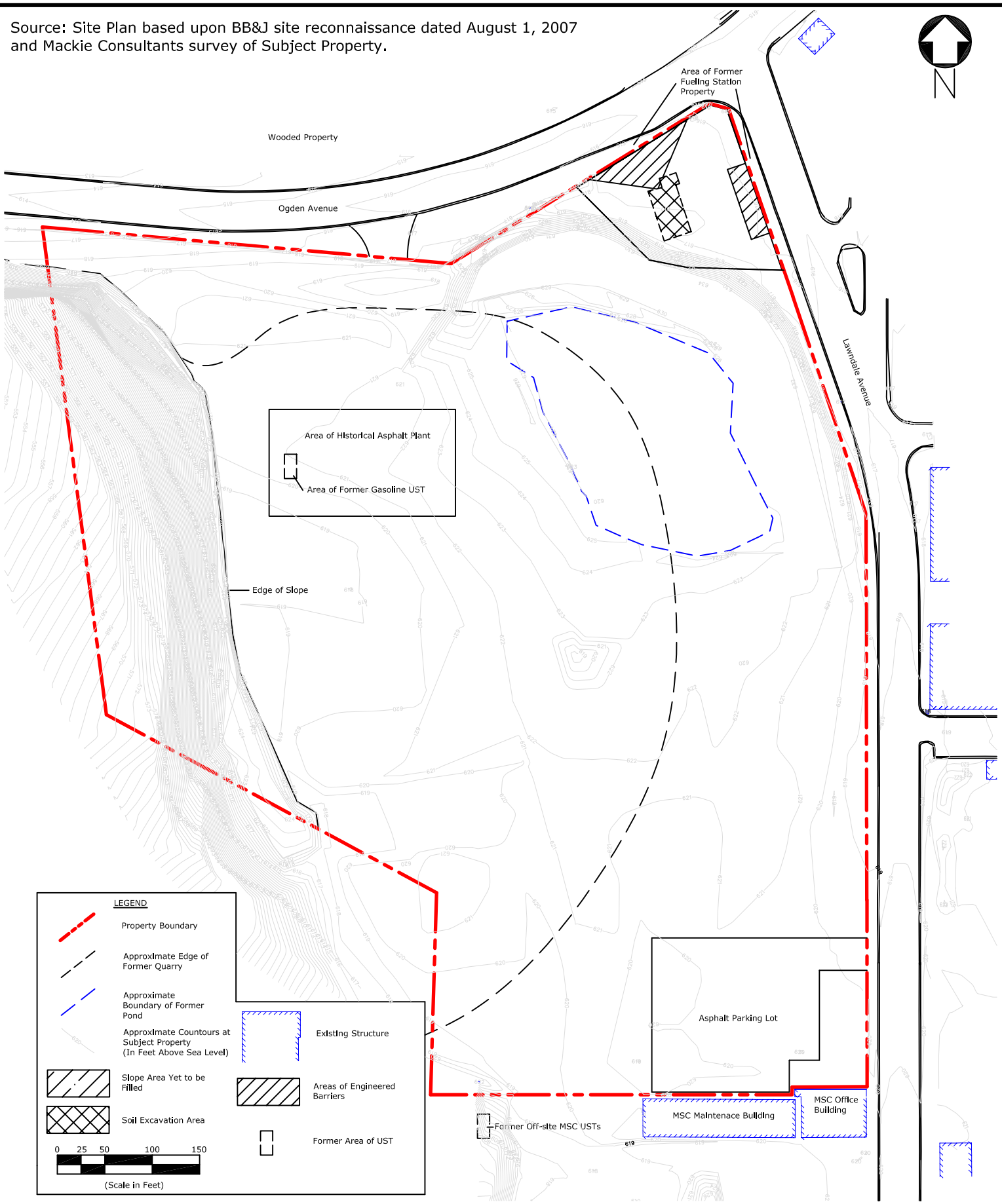
0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: JDM/ 10.05.07
Checked by/Date: AWB / 10.19.07

Quarry Reclamation District TIF #4 0311715101 – Cook County Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project No. 0259004 Figure 1

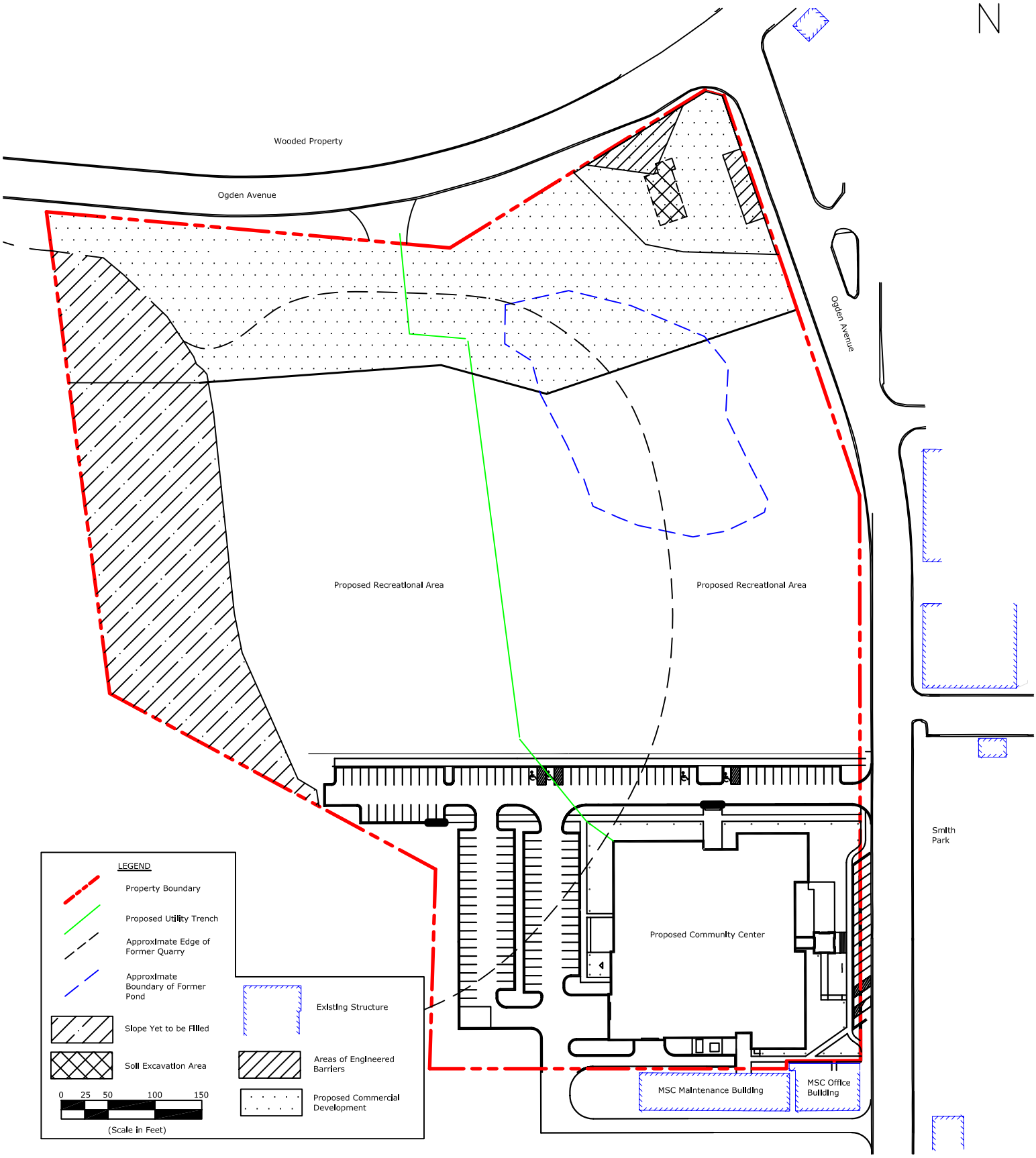
Source: Site Plan based upon BB&J site reconnaissance dated August 1, 2007 and Mackie Consultants survey of Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Base Map Project No. 0259004 Figure 2

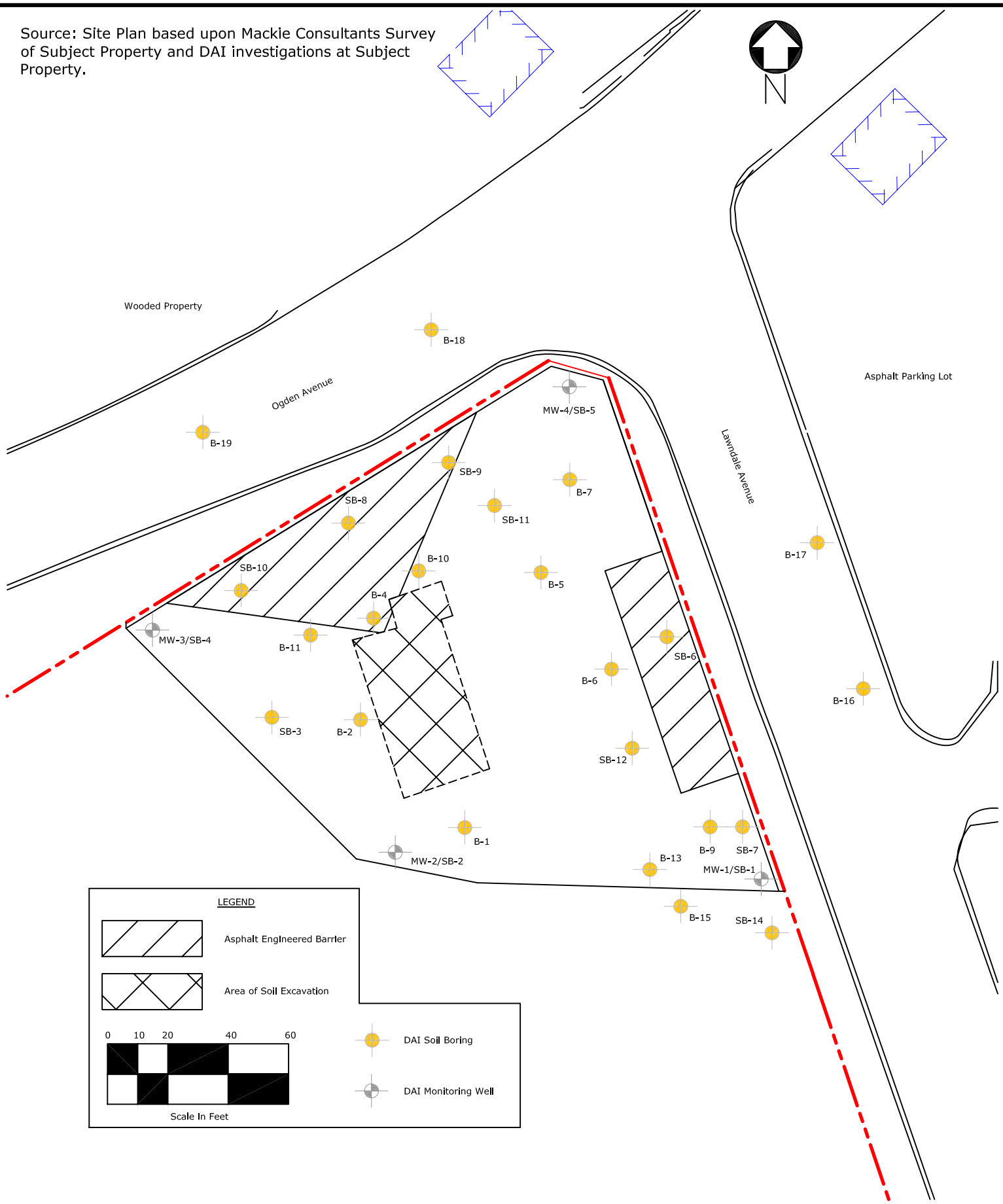
Source: Site Plan based upon Mackie Consultants Survey and Conceptual Figure of Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Proposed Site Layout Project 0259004 Figure 3

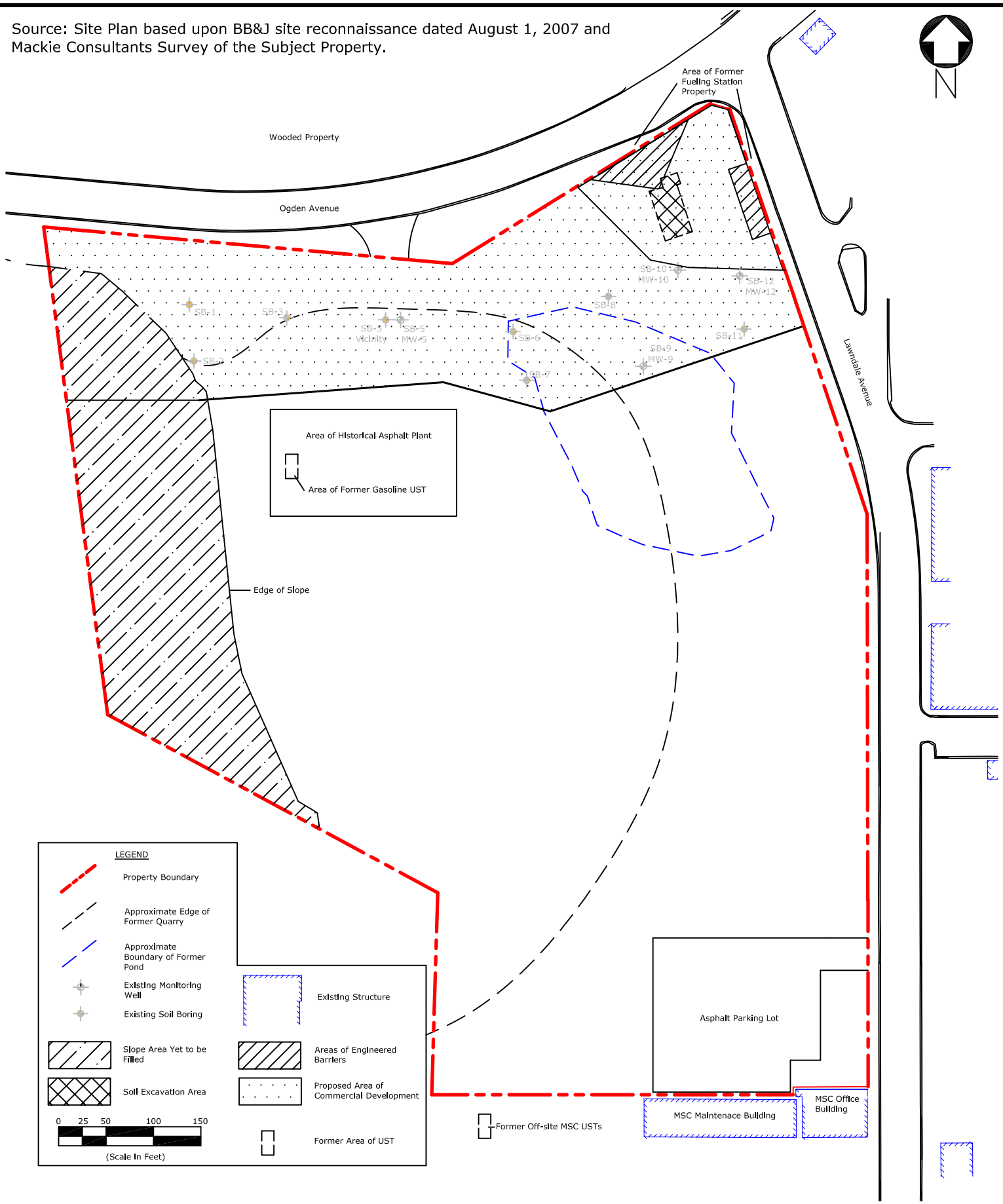
Source: Site Plan based upon Mackie Consultants Survey of Subject Property and DAI investigations at Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	DAI Phase II ESA Soil Boring and Monitoring Well Locations Project No. 0259004 Figure 4

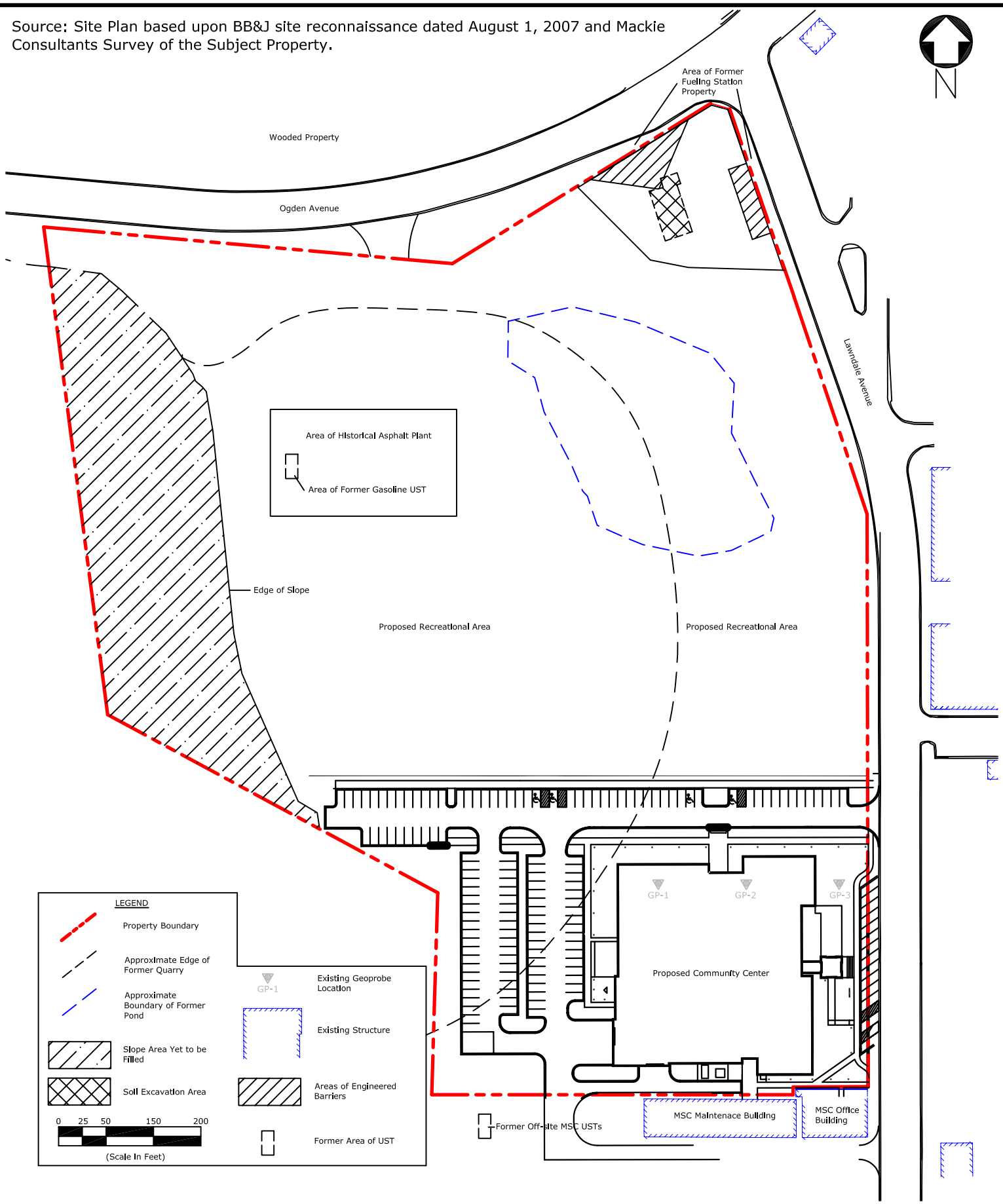
Source: Site Plan based upon BB&J site reconnaissance dated August 1, 2007 and Mackie Consultants Survey of the Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	BB&J Phase II ESA: Commercial Development Soil Borings and Monitoring Wells Project No. 0259004 Figure 5

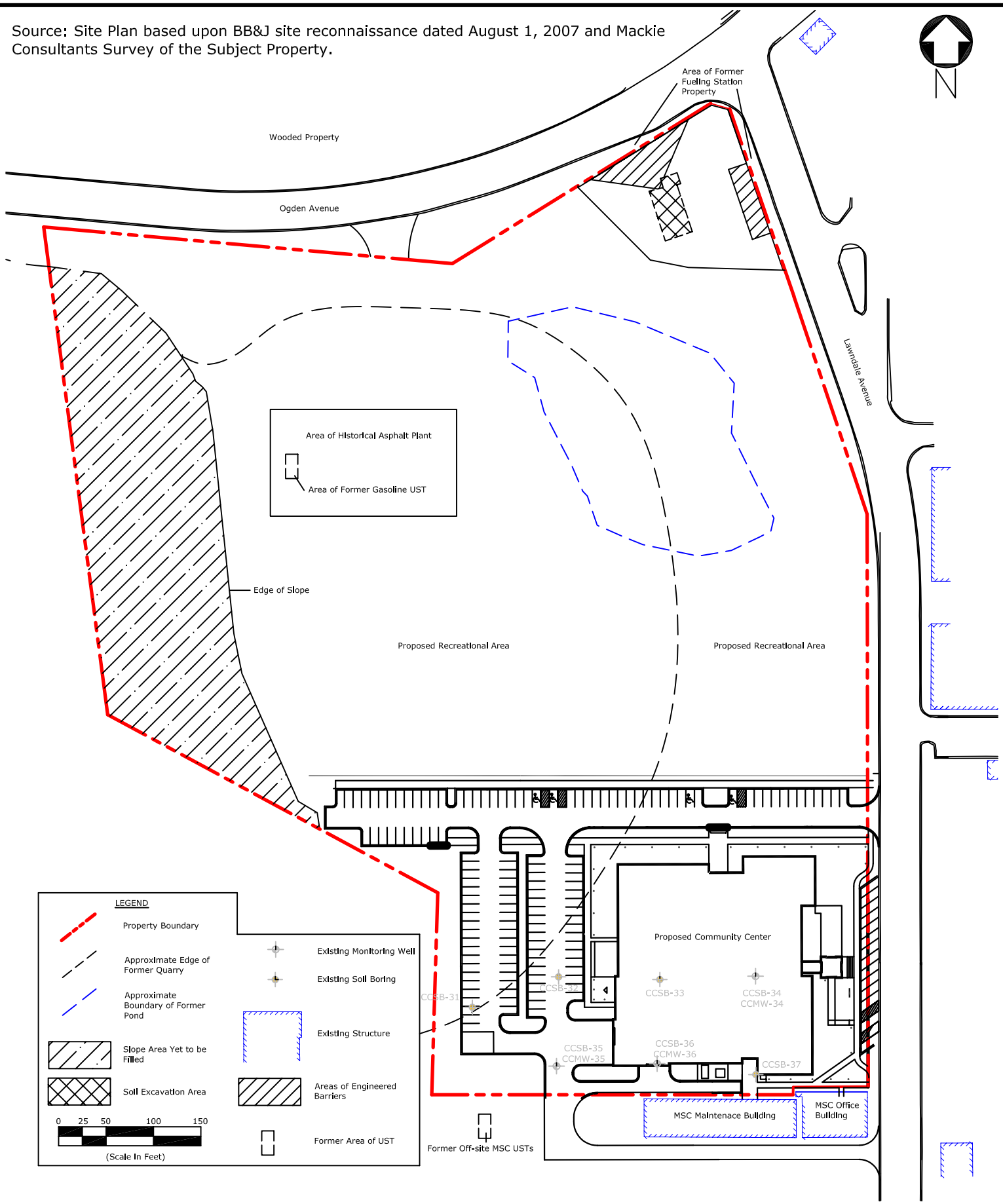
Source: Site Plan based upon BB&J site reconnaissance dated August 1, 2007 and Mackie Consultants Survey of the Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	BB&J Phase II ESA: Future Use Soil Probe Locations Project No. 0259004 Figure 6

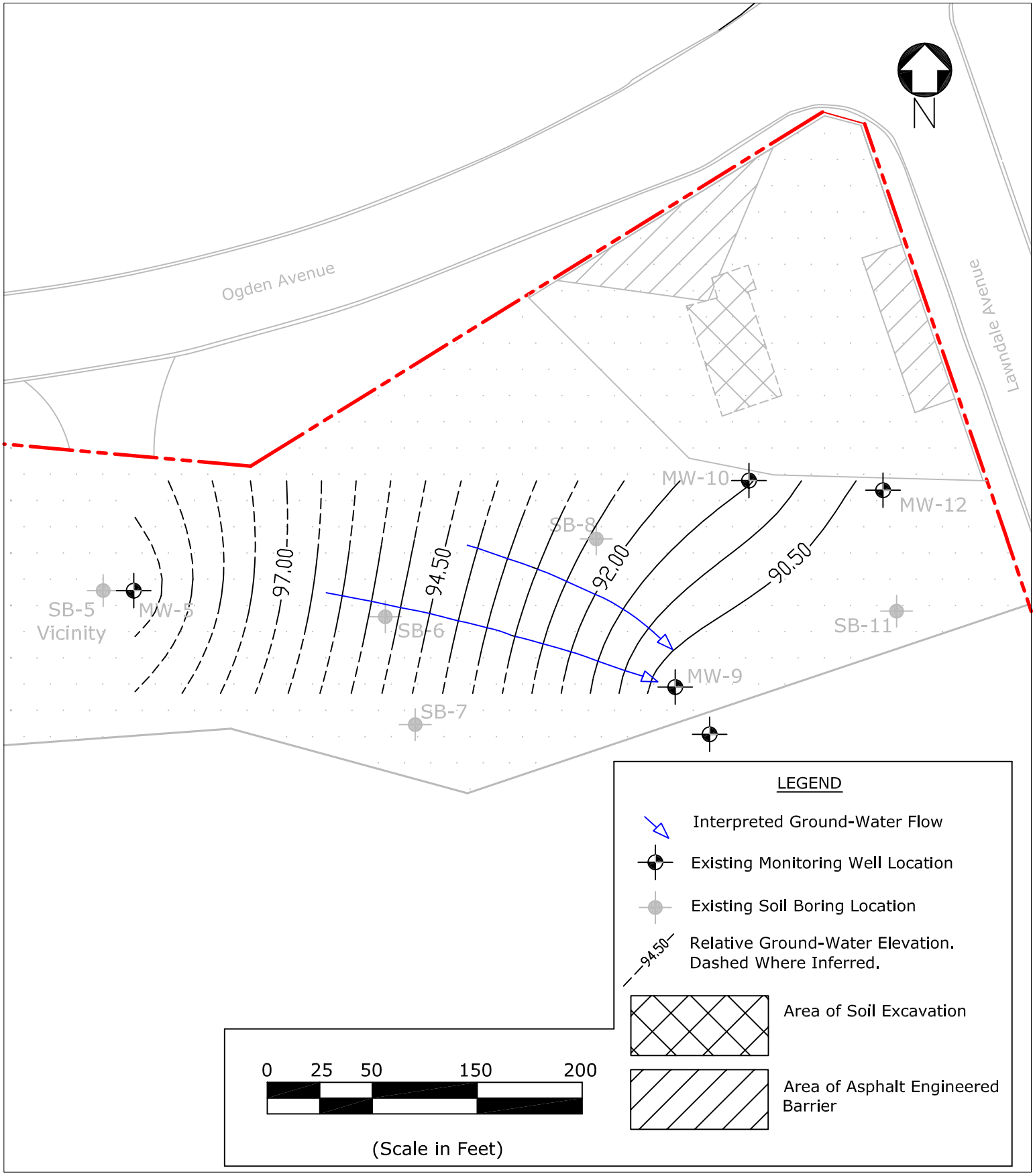
Source: Site Plan based upon BB&J site reconnaissance dated August 1, 2007 and Mackie Consultants Survey of the Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	BB&J Phase II ESA: Community Center Soil Boring and Monitoring Well Locations Project No. 0259004 Figure 7

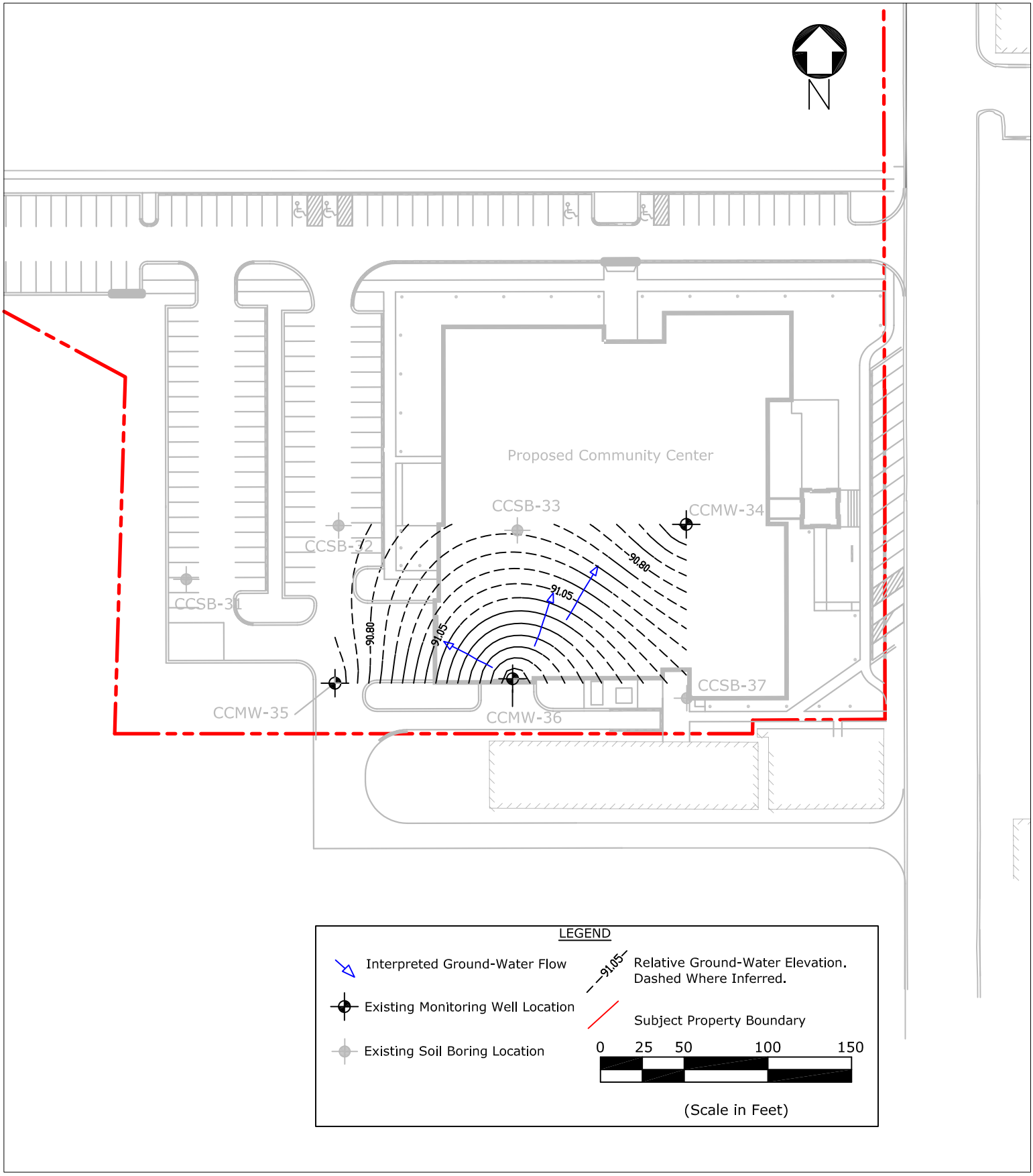
Source: Site Plan based upon Mackie Consultants Conceptual Figure of Subject Property.
Ground-water Potentiometric Map created using Surfer version 6.0.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Quarry Reclamation District TIF #4 03117115101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	BB&J Phase II ESA: Commercial Development Potentiometric Map Project No. 0259004 Figure 8

Source: Site Plan based upon Mackie Consultants Conceptual Figure of Subject Property.
Ground-water Potentiometric Map created using Surfer version 6.0.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

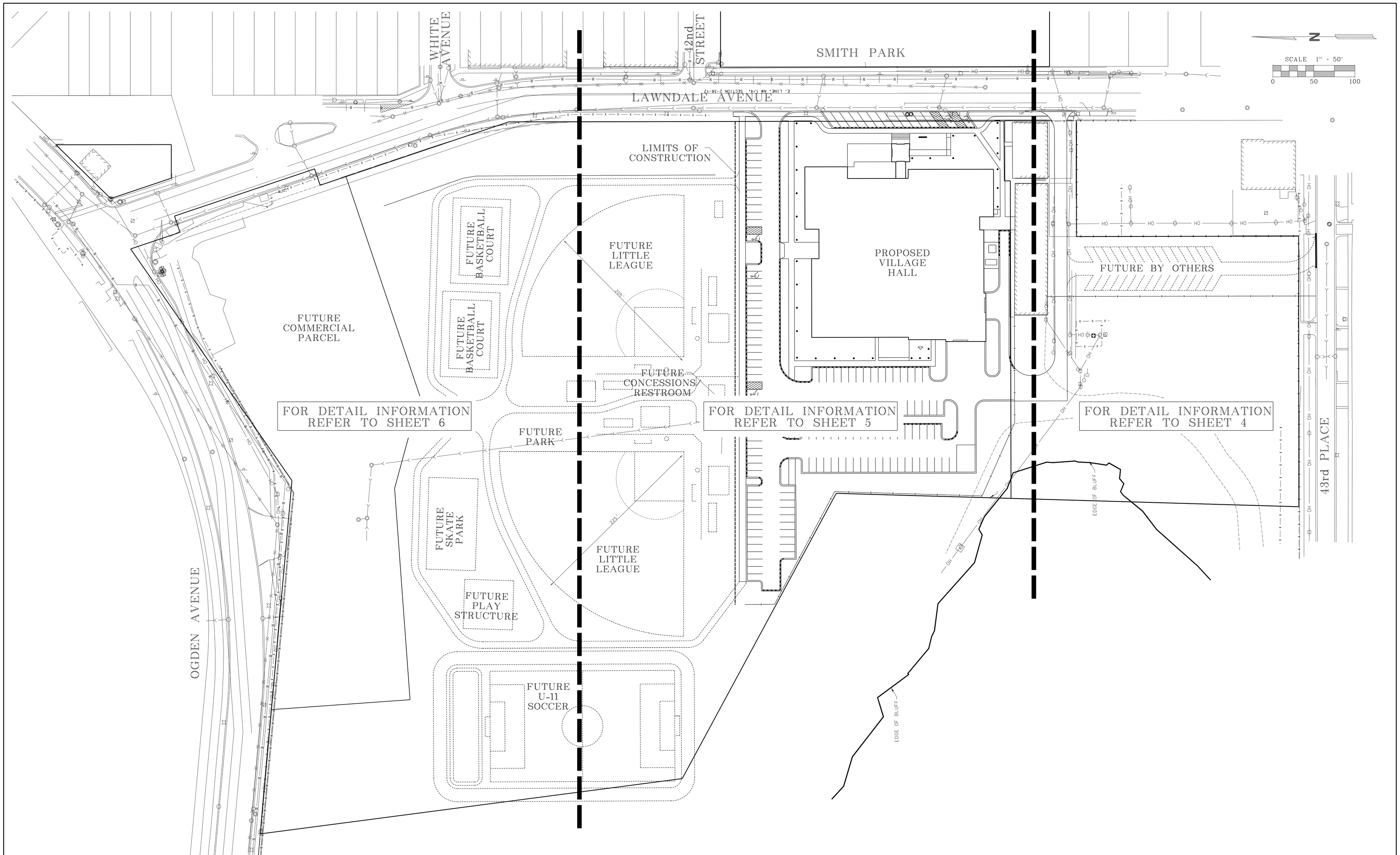
Quarry Reclamation District TIF #4 0311715101 - Cook County Southwest Intersection of Ogden and Lawndale Avenues Village of Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	BB&J Phase II ESA: Community Center Potentiometric Map Project No. 0259004 Figure 9

APPENDIX A

IEPA SRP FORM (DRM-2)

APPENDIX B

LAND TITLE SURVEY and LEGAL DESCRIPTION



MACKIE CONSULTANTS LLC
9575 W. HIGGINS RD., SUITE 500, ROSEMONT, IL 60018
847-696-1400 FAX 847-696-1410
ENGINEERS PLANNERS SURVEYORS
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NUMBER 184-002694

CLIENT:

VILLAGE OF LYONS
7801 WEST OGDEN AVENUE
LYONS, ILLINOIS 60534
PHONE: 708-447-8886 FAX: 708-447-1196

DATE	DESCRIPTION OF REVISION	BY
09/18/07	ARCHITECT & CONTRACTOR COORDINATION REVIEW	JRB

DESIGNED	ST
DRAWN	JRB\WHM
APPROVED	SRK
DATE	09-07-07
SCALE	1" = 50'

OVERALL SITE PLAN
LYONS TOWN CENTER
LYONS, ILLINOIS

SHEET 2 OF 14

PROJECT NUMBER: 1384
FILE: 1384A/VH/E/P/OVAL.PLT

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SCHEDULE 1

LEGAL DESCRIPTION OF PROPERTY

THAT PART OF LOT 2, IN SCHULZ'S SUBDIVISION, IN THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 2, TOWNSHIP 38 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED APRIL 30, 1886, AS DOCUMENT NO. 712410, BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE INTERSECTION OF THE NORTH LINE OF 43RD STREET (33 FEET WIDE) AND THE WEST LINE OF LAWNDALE AVENUE (66 FEET WIDE); THENCE NORTH 00 DEGREES 05 MINUTES 54 SECONDS WEST ALONG THE WEST LINE OF SAID LAWNDALE AVENUE, 55.45 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING NORTH 00 DEGREES 05 MINUTES 54 SECONDS WEST ALONG SAID LAWNDALE AVENUE, 196.84 FEET; THENCE SOUTH 89 DEGREES 45 MINUTES 30 SECONDS WEST, 246.53 FEET; THENCE NORTH 01 DEGREES 22 MINUTES 52 SECONDS EAST, 9.54 FEET; THENCE SOUTH 89 DEGREES 45 MINUTES 30 SECONDS WEST, 207.20 FEET; THENCE SOUTH 01 DEGREE 40 MINUTES 46 SECONDS WEST, 213.10 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 13 SECONDS EAST, 387.13 FEET; THENCE NORTH 00 DEGREES 07 MINUTES 32 SECONDS WEST, 7.30 FEET; THENCE NORTH 89 DEGREES 37 MINUTES 29 SECONDS EAST, 72.97 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

EXHIBIT D

That part of the Northeast Quarter of Section 2, Township 38 North, Range 12 East of the Third Principal Meridian, bounded and described as follows: Commencing at the intersection of the North line of 43rd Street (33 feet wide) and the West line of Lawndale Avenue (66 feet wide); Thence North 00° 05' 54" West along the West line of said Lawndale Avenue, 252.29 feet to the point of beginning; Thence continuing North 00° 05' 54" West along said Lawndale Avenue, 406.86 feet; Thence continuing North 18° 35' 03" West, along said Lawndale Avenue, 242.53 feet; Thence North 71° 24' 57" East, 21.00 feet; Thence North 18° 35' 03" West, 180.20 feet; Thence South 71° 24' 57" West, 21.00 feet to the Westerly line of said Lawndale Avenue; Thence North 18° 35' 03" West along said Westerly line, 63.44 feet to the Southwesterly line of Ogden Avenue; Thence South 55° 09' 56" West along said Southwesterly line of Ogden Avenue, 344.20 feet; Thence continuing North 84° 53' 04" West along the Southerly line of said Ogden Avenue, 432.54 feet; Thence South 07° 28' 23" East, 518.67 feet; Thence South 61° 39' 25" East, 395.43 feet; Thence North 89° 45' 30" East, 207.20 feet; Thence South 01° 22' 52" West, 9.54 feet; Thence North 89° 45' 30" East, 246.53 feet to the West line of said Lawndale Avenue and the point of beginning, in Cook County, Illinois.

APPENDIX C

BB&J FIELD PROCEDURES

APPENDIX D

AE REPORT

ENVIRONMENTAL REMEDIATION REPORT & MONITORING PLAN

AT

PALUMBO BROS. INC LYONS ASPHALT PLANT

Prepared for

PALUMBO BROS., INC.
321 S. Center Street
Hillside, Illinois

7 December 1993

Prepared by

ALPHA ENVIRONMENTAL, INC.
51 Fairway Drive
Glendale Heights, IL 60139
(708) 668-8360

Illinois Environmental Protection Agency
Emergency Response Unit, Mr. Jim O'Brien
2200 Churchill Rd.
Springfield. Illinois

7 December 1993

Subject: Report of site assessment and remediation activities of the Lyons Asphalt Plant diesel fuel spill, IESDA incident #931154.

Dear Ladies and Gentlemen:

Palumbo Bros., Inc. has contracted with Alpha Environmental, Inc. (AE) to perform site investigation and remediation oversight activities at the Lyons asphalt plant site located at 8301 W. Ogden Ave. in Lyons. Illinois. These activities were performed for Palumbo Bros., Inc., the parent company of Orange Crush Recycle Company. The work was done in response to a reported loss of approximately 100 gallons of diesel fuel from an above ground storage tank at the asphalt plant and the subsequent appearance of small amounts of organic material in a low flow water seep along the access road to the quarry, approximately 50 feet below grade.

Palumbo's initial effort at the site was to stop contaminant migration. This was done by constructing a small recovery trench and pumping the organic material from the trench into tankers and drums. The water and organic material was removed for treatment under a multi-stop permit by VanHosen Industries. These activities are ongoing and the trench conditions are monitored on a daily basis.

AE's initial site activities were focused on determining the location of the spill. A 3/4 inch underground pipe which ran from a 10,000 gallon above ground diesel tank was excavated and a pinhole leak was identified near the footings of the Drag Slat Line. The leaking piping was removed. Diesel contaminated soils near the Drag Slat Line footings were removed to a point at which structural concerns were evident. An estimated 50 cubic yards of contaminated soils were removed from the excavation and transported to EnvironTech landfill in Morris. Illinois. Samples collected from the floor and walls of the excavation indicate that the soil remaining in the excavation exceeds IEPA's generic class I soil clean-up objectives.

AE has observed that the volume of organic material in the recovery trench has reduced significantly with time. A total of 3,500 gallons of water have been recovered from the trench. AE estimates that the total volume of product recovered from the trench is 95 gallons. An Estimated 50 gallons of diesel fuel was removed in the soil excavation activities. It is AE's opinion that the efforts performed to date have removed the majority of contamination lost at the site.

The asphalt plant is located on property owned by Material Service Corporation. The site was quarried then filled with highway demolition rubble. Groundwater at the site would likely

be encountered at a depth of 40 to 50 feet below surface. Strong gradients which cause rapid migration of groundwater toward the quarry are also expected. Conventional methods for monitoring and removing contaminated groundwater are not possible at this site.

Regular monitoring of the recovery trench located along the access road into the quarry will continue. When contaminated water is observed, oil absorbent blankets and pumping of the trench will be performed. Water quality tests will be performed on a quarterly basis. in accordance with recent guidance from the underground storage tank unit of the IEPA establishing a "Groundwater Management Zone" (GMZ). After the water quality within the trench no longer contains detectable concentrations of diesel fuel for two consecutive quarters, AE will prepare a report documenting activities and request that the IEPA consider the incident closed.

If after a reasonable period of time, quarterly monitoring does not indicate that the concentration of diesel fuel in the trench is lowering, alternatives include introduction of biological organisms and nutrients to digest the organic material could be introduced.

Attached is a report that summarizes AE's findings. If you have any questions regarding the attached summary report. please contact me.

Sincerely,
Palumbo Bros., Inc.

Mr. Mark Tubay

Attachments:

TABLE OF CONTENTS

1.0 BACKGROUND 1
1.1 Site History 2

2.0 ENVIRONMENTAL SETTING 3
2.1 Regional Topography 3
2.2 Regional Geology 3
2.3 Hydrogeology 4
2.4 Site Conditions 4

3.0 SITE ACTIVITIES 5
3.1 Source Identification 9
3.2 Initial Sample Results 9
3.3 Source Identification 9
3.4 Soil Removal 10
3.5 Soil Sample Results 10

4.0 CONCLUSIONS AND RECOMMENDATIONS 13

FIGURE 1 Portion of the USGS Quadrangle Map 6
FIGURE 2 Site Map 7
FIGURE 3 Cross - Section 8
FIGURE 4 Map of Excavation 11

TABLE 1 SOIL SAMPLE RESULTS 12

Appendix A Historic USGS Quad maps
Appendix B Photolog
Appendix C Initial lab results and Chromatograms
Appendix D Laboratory Results for Soil and Disposal Samples
Appendix E Manifests

1.0 BACKGROUND

Alpha Environmental, Inc. was contracted to provide environmental consulting services to Palumbo Bros., Inc. (parent company of Orange Crush Recycle Co.) regarding a release of diesel fuel from underground piping that is attached to a 10,000 gallon above ground storage tank at a asphalt plant located in Lyons, Illinois.

During a routine inspection in late April, Mr. Mark Tubay of Orange Crush Recycle, Co. measured a 100 ± gallon loss of diesel fuel from an above ground storage tank, Mr. Tubay assumed theft, or poor historic measuring practices as being responsible for the loss in fuel. The tank was secured with a lock and all valves were closed. Two weeks later, a representative of Material Service Corporation, the owner of the property that the asphalt plant is on, contacted Orange Crush Recycle Company, Inc. and told them that organic contamination was visible from a single seep along the roadway that leads into their limestone quarry. A backhoe was mobilized to the site and a cut-off trench was made to contain and capture the organic contamination along the roadway. Mr. Tubay contacted the Illinois Emergency Services Disaster Agency (IESDA) and reported a release, on the assumption that the incidents were related. IESDA issued incident number 931154.

The site is located at grade on the northeast corner of an active quarry which is located at the corner of Ogden Avenue and First Avenue in Lyons, Illinois. Palumbo Bros. operates the a asphalt plant on the central part of the property which is owned by Material Service Corporation (MSC). The asphalt plant is located on an old mined out area of the quarry which was reportedly filled with concrete and asphalt road demolition debris by MSC. According to Mr. Frank Werderitsch of MSC, the filling at the site occurred prior to promolgation of regulations governing filling activities. The quarry has been active since the turn of the century mining the Silurian-aged dolomite. The fill material is reportedly boulder sized concrete and would make conventional investigation and remediation techniques very difficult. The asphalt plant has been at the site for approximately 10 years, prior to that, an asphalt plant owned by a different company occupied the site.

1.1 Site History

AE reviewed an aerial photograph dated 1991 and USGS quadrangle maps as revised in 1925, 1956, and 1979. Other available records were reviewed and persons that had knowledge of the site were interviewed. AE also reviewed available data bases to determine if there were any sites in the vicinity of the quarry that could be contributing to the contamination identified along the quarry road. The review of historic data bases identified twenty facilities within a one mile radius of the site, including State and Federal Superfund sites, and Leaking underground storage tank sites.

The 1925 USGS Quadrangle map indicates that the area Palumbo Bros. leases was quarried to an approximate depth of 542 feet above mean sea level (MSL) or about 80 feet below the land surface. The 1956 quad map indicates that the quarry was present but no contouring of elevations is provided on the map. The 1979 quad map indicates that the center of the quarry moved toward the south and west and that the total depth of the quarry was 425 feet above mean sea level or approximately 190 feet below land surface. Access roads to the quarry was as it is today. Material Service's buildings are in place on the southeast side of the property and the entire eastern third of the site has been filled to grade. There is no sign of an asphalt plant on the site at this time. Appendix A contains copies of the historic quadrangle maps and Figure 1 of this report is a portion most recent quad map.

2.0 ENVIRONMENTAL SETTING

2.1 Regional Topography

The surface of Chicagoland has been formed by the action of water and glacial ice. The major land forms were shaped by the scouring and bulldozing action of the glaciers and the deposits in meltwater streams and lakes. A series of elliptical shaped ridges parallel the shore line of the present day Lake Michigan. These ridges are referred to as the Lake Border Moranic System. The depressions between these ridges contain lakes, small wetlands areas or river and stream beds. Over time, much of this moranic system has been altered by man-made influences, to accommodate the present day conditions of an urban land use.

2.2 Regional Geology

The glacial sediments in the vicinity of the site are relatively thin dense silty-clay tills of the Wadsworth Member of the Wedron Till. This till unit is made up of dense unstratified silty clay sediments with shale and limestone fragments and makes up the majority of unconsolidated sediments in this general area. This overburden is approximately 15 feet thick in the immediate vicinity of the site but is upward to 80 feet thick in most areas of Chicagoland.

Bedrock in the area unconformably underlies the unconsolidated glacial material and consists of the Silurian-age Niagaran dolomite. This dense micritic dolomitic limestone was formed by inland seas and was originally solution and reefal type limestone deposits. The original vuggy pore space remains in former reefal areas and solution and dissolution fractures are present predominantly in the upper 50 feet. Underlying the Niagaran dolomite is a Ordovician-age shale and dolomite unit called the Maquoketa Group.

Underlying the Maquoketa group is a series of limestone and sandstone deposits referred to as the Cambro-Ordovician Aquigroup. This group of water bearing units is approximately 1700 feet thick in the vicinity of the site.

2.3 Hydrogeology

Aquifers in the area are made up of five major water yielding units. Three of the aquifer units are deep and make up the Cambro-Ordovician Aquigroup. This deep series of water bearing rock is separated from the shallower groundwater resources by a relatively thick, low permeability, Ordovician shale unit. The two water yielding units of concern with regard to this report are the two aquifers closest to the surface: sand and gravel units in the upper unconsolidated glacial material and the Silurian dolomite. Water is locally replenished to these units from rainfall and seepage from surface water bodies. These two aquifers are locally in communication with one another discharging and recharging as hydraulic pressure dictates. The Silurian bedrock is a uniform massive water supply that regionally flows from the west toward the east and discharges to Lake Michigan except locally where altered by lithologic constraints or by man-made pumping. The presence and flow of water in the shallow glacial drift aquifers are typically controlled by topographical conditions. Direction of flow of the water within these shallower units could also be influenced by man-made pumping or by surface water control structures.

2.4 Site Conditions

This site is located on a bedrock ridge, and approximately 15 feet of overburden was present naturally prior to quarry activities. Water that infiltrates below man-made structures such as storm sewers, flows toward the quarry within the pumping cone of influence of the quarry. Groundwater flow pathways are controlled by the fractures within the shallow bedrock. These fractures are thought to be oriented northeast to southwest, and water entering the quarry can be observed trickling down the northeast access road into the quarry and from the southwest wall of the quarry.

Surface water that is not captured by the quarry would flow toward the Des Plaines River and the ship and sanitary canal. Water captured by the quarry dewatering activities is pumped from a trench at the bottom of the quarry into a holding pond at surface grade.

Groundwater in the vicinity of the site is not used as a drinking water supply and the area. Drinking water is provided by the MWRDGC which withdraws, water from Lake Michigan.

3.0 SITE ACTIVITIES

AEs initial site visit was performed on 14 May 1993. Mr. Mark Tubay of Palumbo Bros., Inc. walked the site with AE personnel. The above ground diesel tank and the 3/4 inch underground piping were located. Mr. Tubay pointed out an empty gasoline underground storage tank owned by Palumbo Brothers located on the west side of the site and underground gasoline and diesel tanks on the MSC site (See Figure 2). Mr Tubay indicated that he had observed a loss of approximately 100 gallons of diesel fuel from the above ground storage tank in late April and at that time assumed that the loss was the result of poor measuring practices or theft.

AE personnel proceeded to drive into the quarry to the area where floating organic material was skimmed and collected in absorbent booms. A sample of the organic material was collected for laboratory analysis. A sample of the diesel fuel from the above ground storage tank was also collected for the purpose of comparison. About one half inch of floating product was observed in the trench area which was approximately 30 ft. x 15 ft. The contamination in the trench area was black and unrefined in appearance which could indicate that biological decay of the material had occurred. Water was observed flowing into the trench at a rate of 5 to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit. The lab results confirmed that the material is diesel fuel. Photographs of the trench are included in Appendix B.

The gasoline UST on the Palumbo site has an observation well. During the site visit, AE attempted to collect a sample from that well: However, no water was present in the well and no soil or sediment contamination was observed in the sampling instrument upon removal from the well. Vapor analysis using a PID that was lowered into the observation well indicated that no detectable hydrocarbon vapors were present. Mr. Frank Werderitsch indicated that the two USTs that are owned and operated by MSC on their site had been tightness tested and were determined to be competent.

FIGURE 1
Portion of the USGS Quadrangle Map

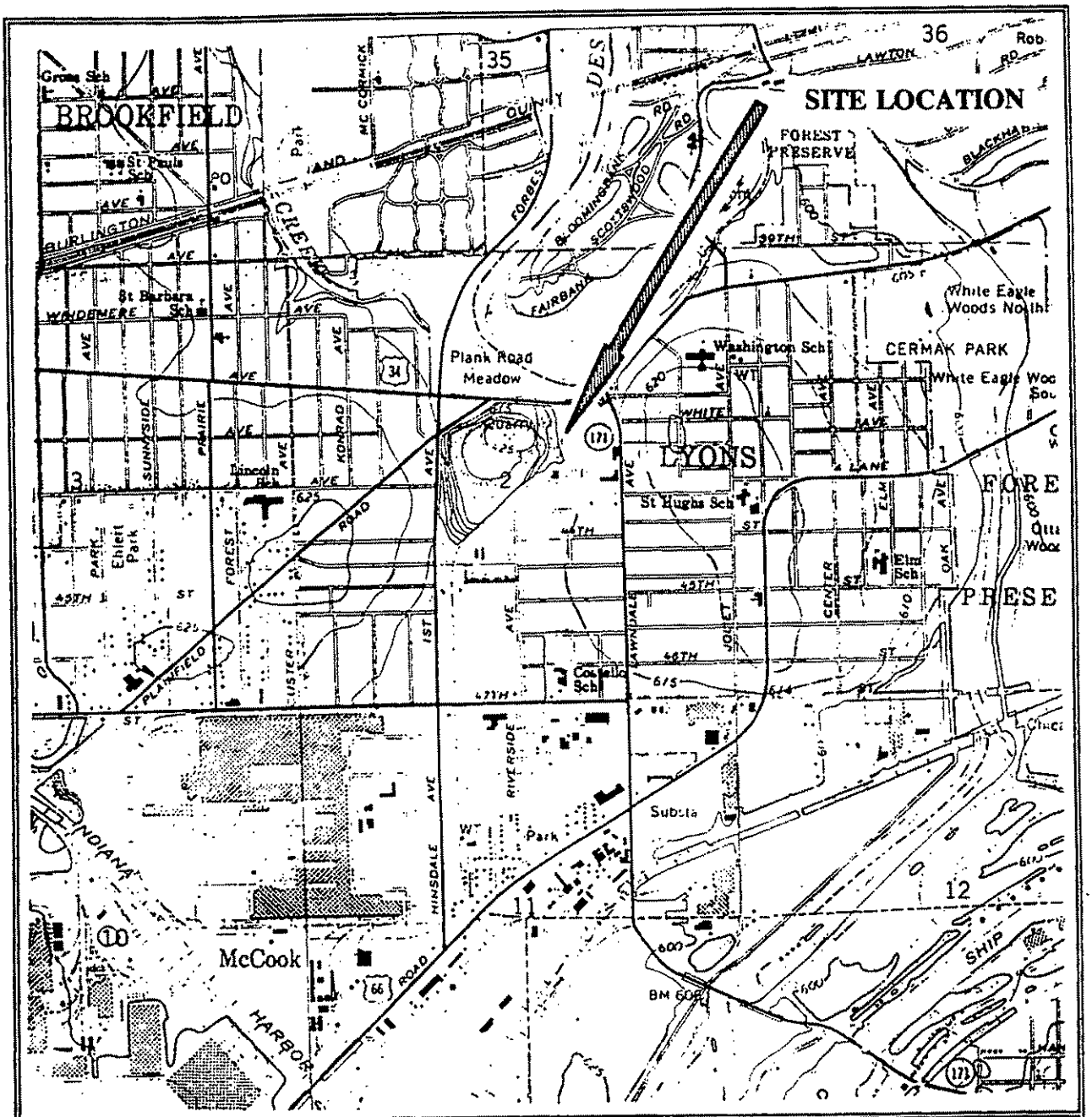


FIGURE 1
PORTION OF USGS RIVERSIDE QUAD MAP
SHOWING THE PALUMBO BROS. ASPHALT PLANT
LYONS, ILLINOIS

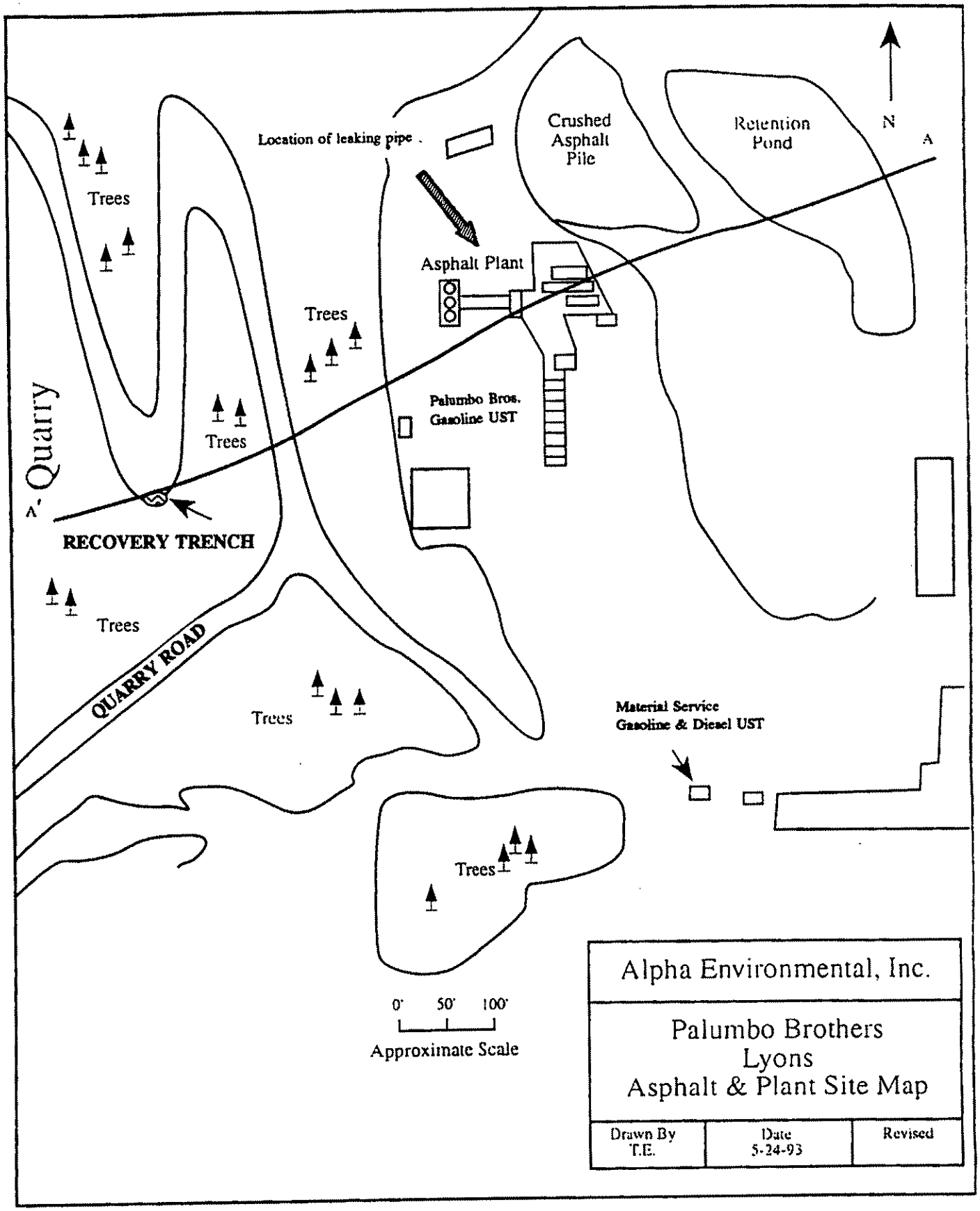

Location of leaking pipe
Crushed Asphalt Pile
Retention Pond
N
A
Trees
Asphalt Plant
Trees
Palumbo Bros. Gasoline UST
Trees
Quarry
A'
RECOVERY TRENCH
Trees
QUARRY ROAD
Trees
Material Service Gasoline & Diesel UST
Trees
0' 50' 100'
Approximate Scale
Alpha Environmental, Inc.
Palumbo Brothers
Lyons
Asphalt & Plant Site Map
Drawn By T.E.
Date 5-24-93
Revised

FIGURE 2

Palumbo Bros. Asphalt Plant

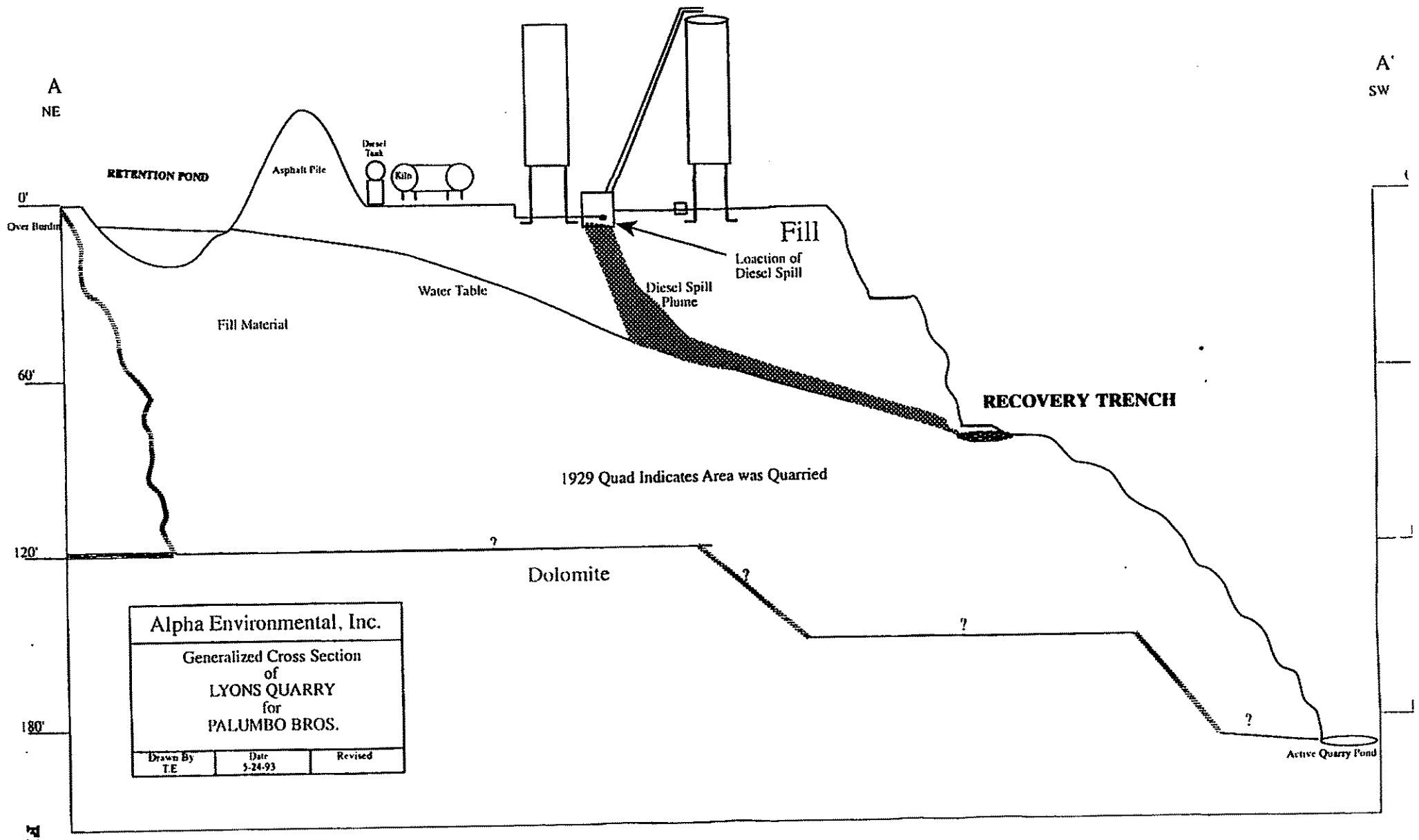


FIGURE 3

At the time of the site visit, Mr. Tubay indicated that the contents of the trench had been drained and skimmed and that the oil absorbent blankets were replaced daily. A total of 1500 gallons of water had been transported off-site under a multi-stop permit. Mr. Tubay indicated that contamination in the recovery trench would be monitored daily and pumped out as necessary. The oil absorbent blankets would be replaced as necessary and all of these activities would be recorded. Liquids from this release will be removed by VanHoesen, North Branch Environmental Company under a multi-stop permit.

3.1 Source Identification

In an effort to locate any contributing sources of contamination at the site, AE reviewed the IEPA's list of leaking underground storage tank sites, the CERCLIS list (list of potential problem sites), the SRAPL list (state superfund list), and the NPL list (National Superfund List). AE also attempted to determine the source of fill material that was used by Material Service Corporation prior to placement of the Palumbo Bros. asphalt plant. AE identified a total of 20 sites within a one mile radius of the site that could contribute to environmental problems at the site.

3.2 Initial Sample Results

The samples collected from the trench and from the above ground diesel tank were analyzed for Total Petroleum Hydrocarbons (TPH) and the chromatograms were compared to determine if the compounds had a similar "fingerprint". The results of the sampling indicated that the product from the above ground diesel tank consists of 930,000 parts per million diesel range petroleum hydrocarbons. The sample skimmed from the trench surface contained 790,000 parts per million of diesel range hydrocarbons. The two chromatograms are nearly identical, indicating that the floating contamination in the trench is primarily diesel fuel contamination. Lab results, a chain of custody form and the chromatograms are included in Appendix C.

3.3 Source Identification

Immediately after confirmation that the material in the quarry trench was diesel fuel, excavation of the ¾ inch under ground piping was performed. Excavation began in the vicinity

of the heating unit and proceeded to the footings of the drag slat line where visibly contaminated soils were identified. Photo Ionization Detector (PID) readings in this area exceeded 125 units. In order to determine the exact location of the leak, a high pressure air line was hooked to the above ground portion of the line. A pin hole leak was identified on the bottom of the ¾ inch underground piping where the piping ran along the west side of the asphalt support pillar. The entire underground line and all appurtenant equipment were removed.

3.4 Soil Removal

Excavation of contaminated soils was performed until the backhoe exposed the footings of the asphalt plant foundation. Upon exposing the footings of the asphalt plant and the drag slat line. AE personnel observed that the diesel had migrated thorough the shallow soils to the top of the footings then along that plane in all directions. The soil excavation and staging activities proceeded as identified in Figure 3. Excavation activities were halted due to concerns of the structural integrity of the asphalt plant and drag slat line. The bottoms of the footings were exposed and in some cases slightly undercut to remove as much contamination as possible.

Upon completion of excavation soil samples were collected from the floor and walls as identified in Figure 4, and sent to the laboratory following standard sample collection, handling, and chain of custody protocol. Soils were analyzed for benzene, ethylbenzene, toluene, xylene (BETX) and for Polynuclear Aromatic Hydrocarbons (PNA). One sample was also analyzed for disposal parameters in accordance with the requirements of the EnvironTech Landfill in Morris.

After collection of the soil samples, the excavation was lined and backfilled with clean fill material. Approximately 50 cubic yards of contaminated soils were removed from the spill area, staged on plastic. and covered awaiting disposal authorization.

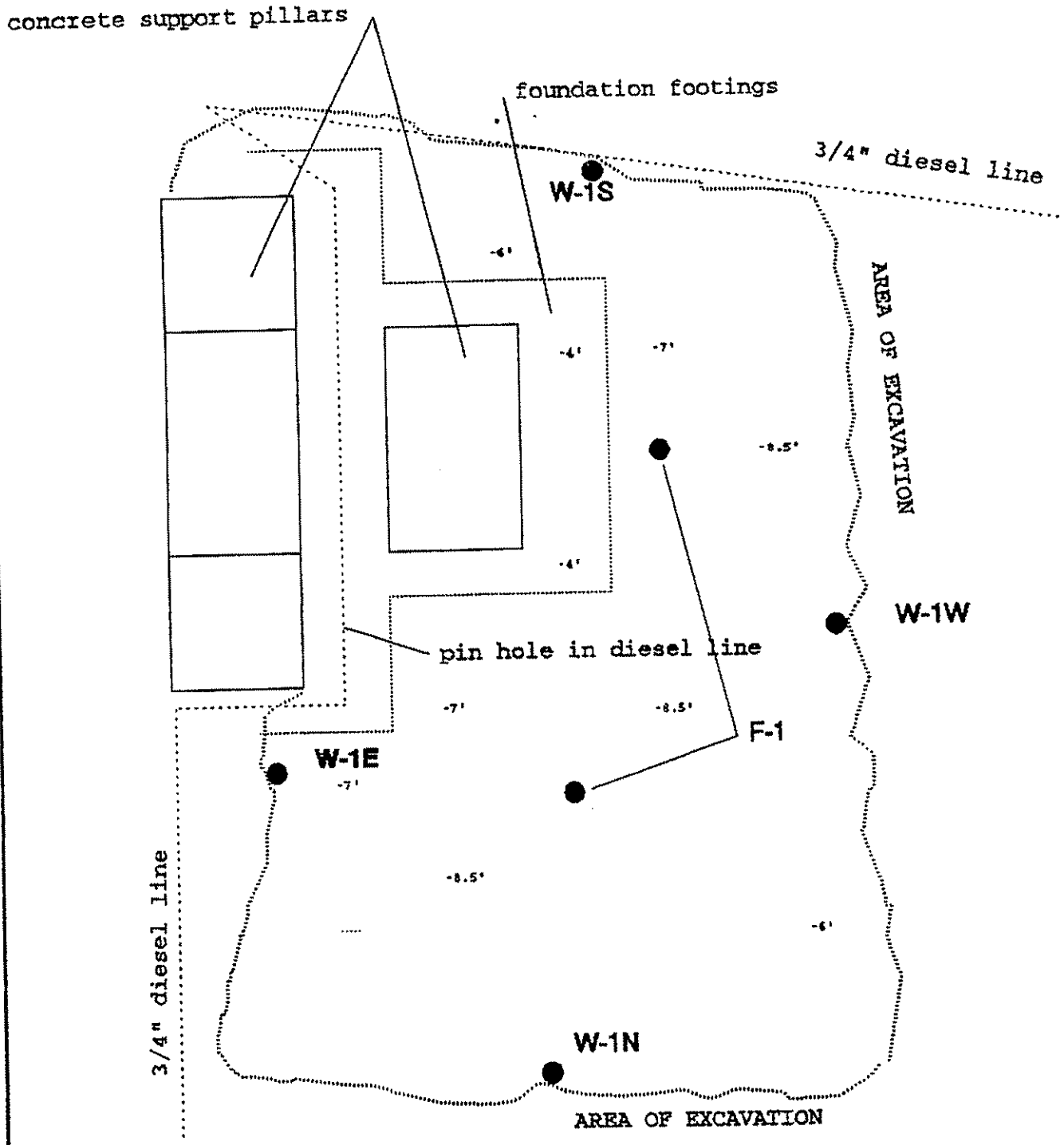
3.5 Soil Sample Results

Table 1 contains a summary of the laboratory analytical data. The table compares the lab data to the IEPA's generic class 1 soil clean up objectives. The concentration of contaminants identified in each soils sample collected exceeds one or more of those standards.

Sample	F-1	W-1N	W-1S	W-1E	W-1W	Acceptable Detection Limit
Description	COMP	GRAB	GRAB	GRAB	GRAB	
BTEX						
Benzene	BDL	.089	BDL	BDL	BDL	.00009
Toluene	1.6	.095	BDL	1.7	.071	.0001
Ethylbenzene	5.5	0.67	0.80	12.0	0.21	.00005
Xylene	12	1.3	1.1	39.0	0.70	0.002
B+E+T+X (TOTAL)	19	2.2	1.9	53.0	0.98	
PNAs						
Acenaphthene	BDL	BDL	1.6	4.1	BDL	0.66
Acenaphthylene	BDL	BDL	BDL	BDL	BDL	0.66
Anthracene	BDL	BDL	BDL	BDL	BDL	0.66
Benzo(a)anthracene	0.78	.022	0.32	0.41	0.92	.0087
Benzo(a)pyrene	0.51	.023	.079	BDL	1.2	.015
Benzo(b)fluoranthene	0.56	BDL	BDL	BDL	1.1	.012
Benzo(g,h,i)perylene	BDL	BDL	BDL	BDL	0.35	0.66
Benzo(k)fluoranthene	0.38	.027	BDL	BDL	0.65	.011
Chrysene	0.73	BDL	BDL	0.62	1.2	.1
Dibenzo(a,h)anthracene	0.11	.021	BDL	0.13	BDL	.02
Fluoranthene	5.0	BDL	14	32	2.6	.014
Fluorene	BDL	BDL	2.4	7.3	BDL	.014
Indeno(1,2,3,-c,d)pyrene	0.78	BDL	BDL	BDL	1.1	.0029
Naphthalene	1.9	BDL	BDL	13	BDL	.0006
Phenanthrene	1.5	BDL	5.0	16	BDL	0.66
Pyrene	1.6	BDL	1.2	2.3	1.3	0.18
Other Non-Car. PNAs	1.5	BDL	5.0	16	0.35	NA

TABLE 1
SOIL SAMPLES - LABORATORY RESULTS (expressed in ppm)
Laboratory: Great Lakes Analytical

BDL - below detection limit
Shading denotes concentrations above LUST Standards
BTEX analyses method: SW-846, 8020 (modified) and 8310



Alpha Environmental, Inc.

ORANGE CRUSH RECYCLE CO.

LYONS ASPHALT PLANT

SOIL EXCAVATION MAP

T. EMMO	6/16/93	FIGURE 4

● SOIL SAMPLE

S

0' 4'

scale

4.0 CONCLUSIONS AND RECOMMENDATIONS

Palumbo Bros. Inc. has contracted for the pumping, transportation, and treatment of over 3,500 gallons of diesel contaminated water from the recovery trench located on the northeast access road into the quarry. Recent site visits indicate that the water quality within the recovery trench is visibly less contaminated and the product layer is virtually unperceptable except after heavy rainfall events.

Palumbo Bros. Inc has excavated transported, manifested and disposed of 50 yards of petroleum contaminated soil. These soils were disposed of at an IEPA approved special waste landfill. The soil excavation in the vicinity of the asphalt plant was discontinued due to structural concerns.

Based on the review of historical information, anecdotal evidence and physical observations, AE concludes that the Palumbo Bros. asphalt plant is located on a filled area of the Lyons quarry. For this reason, conventional subsurface investigation and groundwater recovery system for this site are not considered feasible.

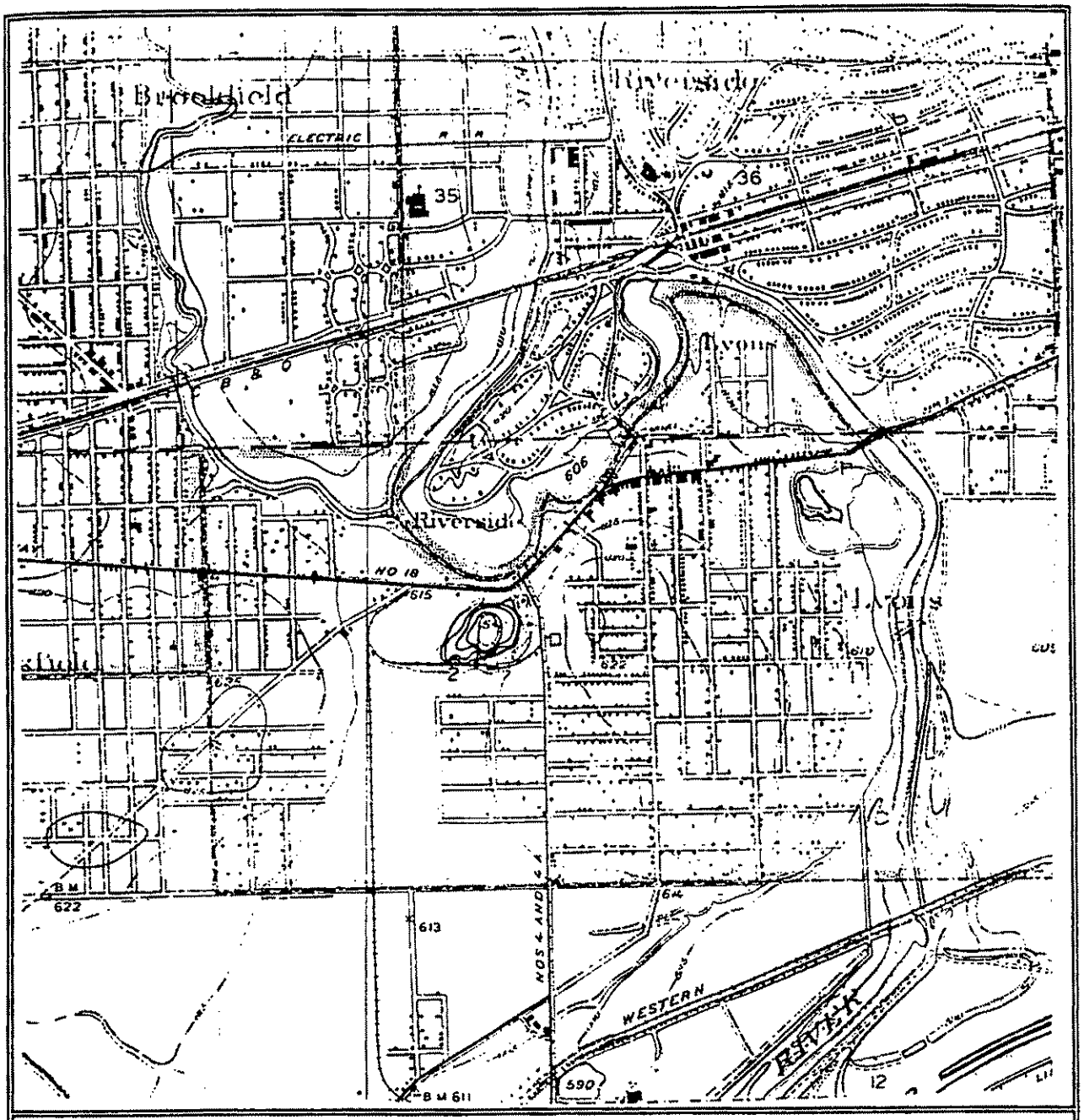
AE proposes that regular monitoring of the recovery trench located on the side wall of the quarry continue. When contaminated water is observed. oil absorbent blankets and water pumping of the trench will be performed. Water quality tests will be performed on a quarterly basis, in accordance with recent guidance from the underground storage tank unit of the IEPA establishing a "Groundwater Management Zone" (GMZ). After the water quality within the trench no longer contains detectable concentrations of diesel fuel for two consecutive quarters, AE will prepare a report documenting activities and request that the IEPA consider the incident closed.

If after a period of sampling there does not appear to be significant improvement in the water quality at the trench location. Alternative remedial technologies will be considered for the site.

APPENDIX A

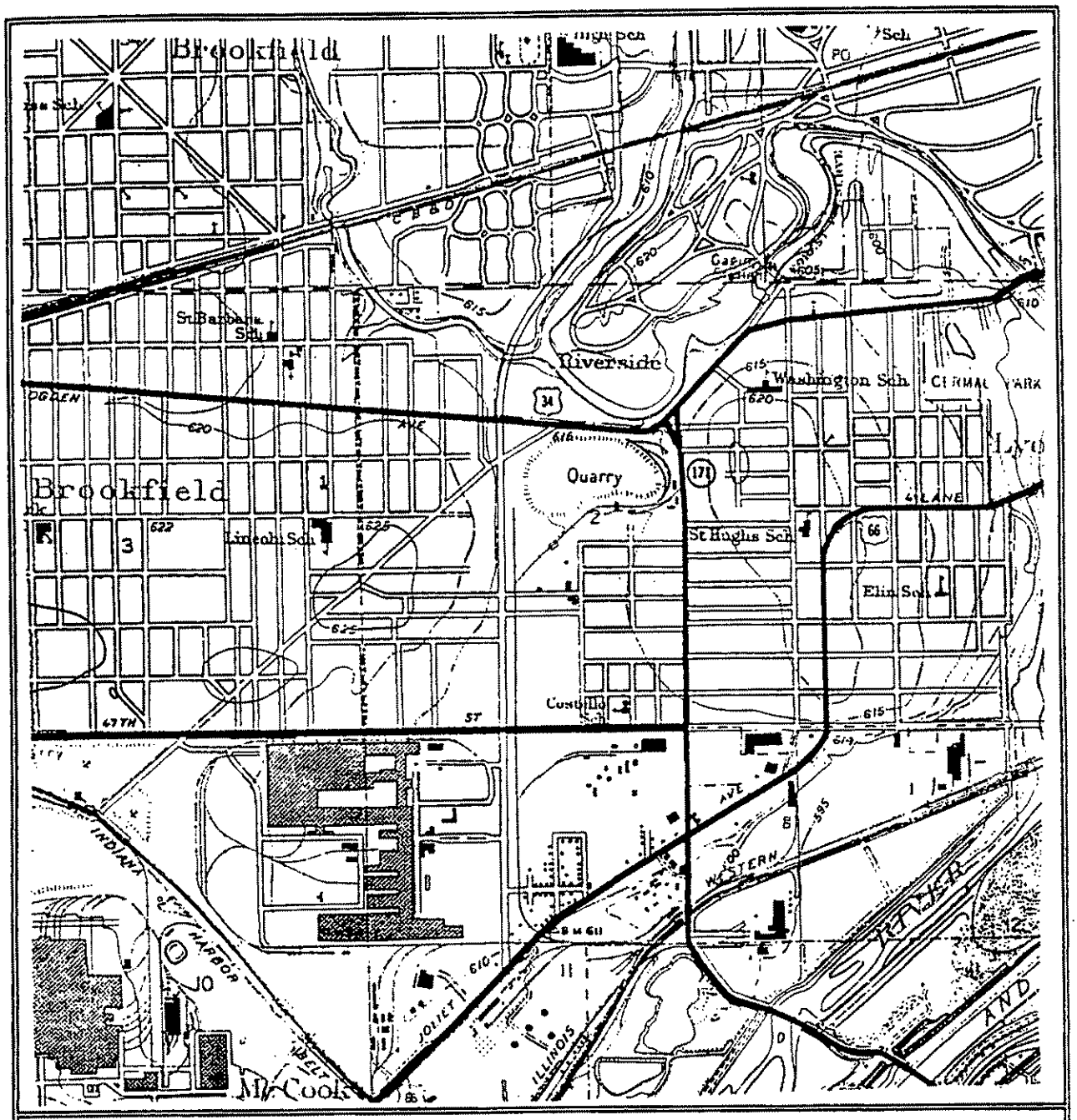
HISTORIC USGS QUAD MAPS

APPENDIX A
Portion of the USGS Quadrangle Map



APPENDIX A, FIGURE 1
PORTION OF 1929 USGS RIVERSIDE QUAD MAP
SHOWING THE LYONS, ILLINOIS QUARRY

APPENDIX A
Portion of the USGS Quadrangle Map



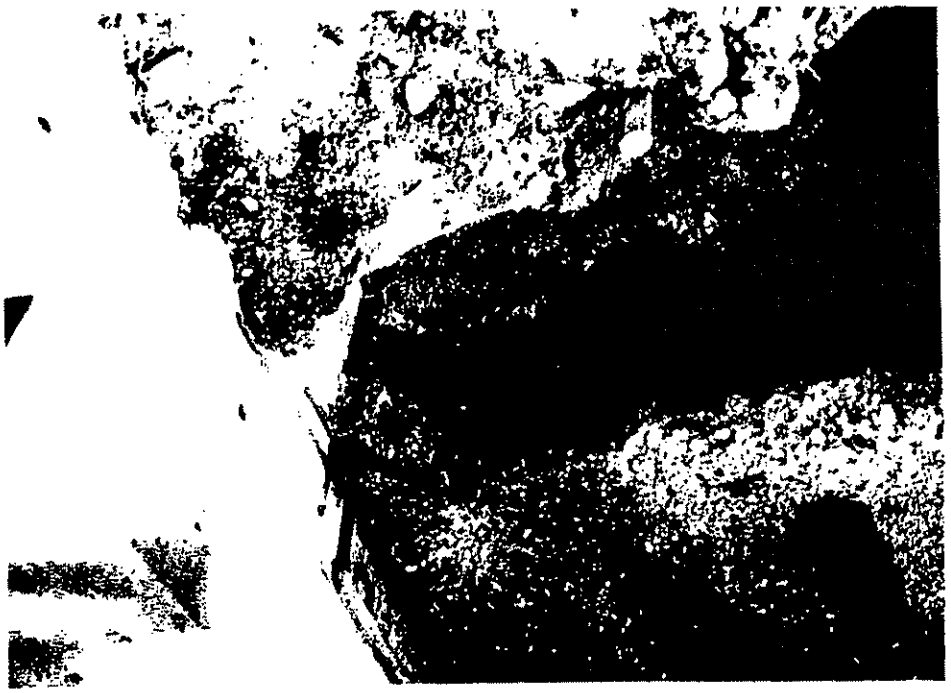
APPENDIX A, FIGURE 2
PORTION OF 1956 USGS RIVERSIDE QUAD MAP
SHOWING THE LYONS, ILLINOIS QUARRY

APPENDIX B

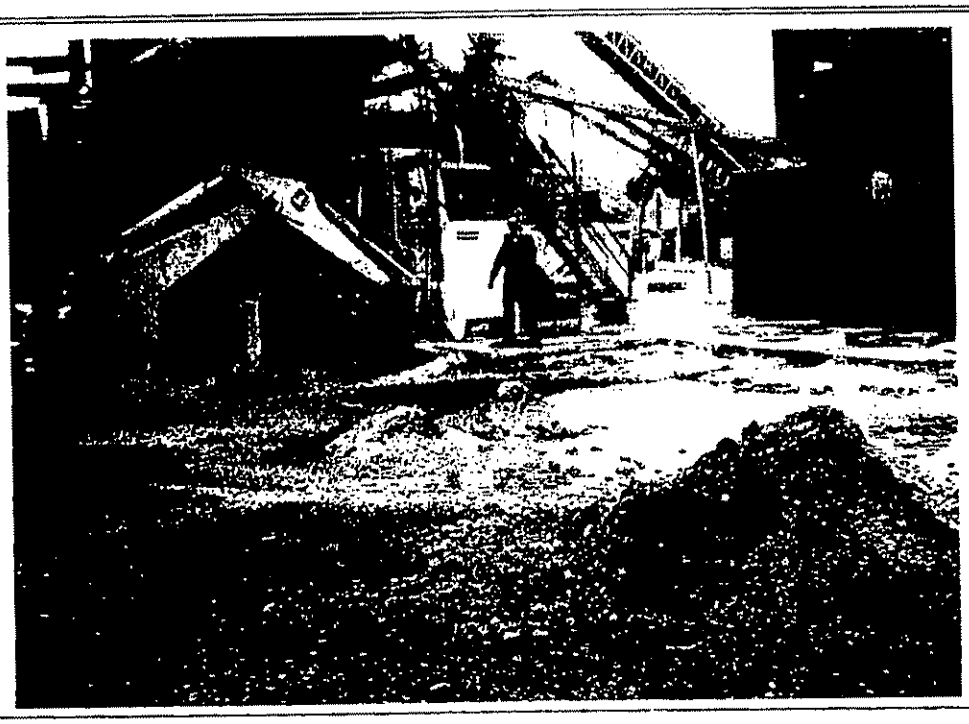
PHOTOLOG

Remarks: 5/19/93, Contaminated water ponded in the Material Services quarry, approximately 1/2 in. of floating petroleum measured

Remarks: 5/19/93. See above



Remarks: 5/19/93, Backhoe uncovers buried 3/4 in. diesel line to determine if the line had leaked.



Remarks: 5/19/93, Backhoe locates area of contaminated soil and leak in vicinity of the drag slat line footings.

APPENDIX C

CHROMATOGRAMS & INITIAL SAMPLE RESULTS

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

Environmental	Client Project ID:	Palumbo Bros.	Sampled:	May 14, 1993
rway Drive	Matrix Descript:	Liquid	Received:	May 14, 1993
ale Heights, IL	Analysis Method:	EPA 3510/8015	Extracted:	May 14, 1993
ion: Tom Enno	First Sample #:	305-0454	Analyzed:	May 16-17, 1993
			Reported:	May 17, 1993

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/L (ppm)
05-0454	Diesel Standard, Sample #1	930,000
05-0455	Ponded Area, Sample #2	790,000

tion Limits:	500

oiling Point Hydrocarbons are quantitated against a diesel fuel standard.
e matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

T LAKES ANALYTICAL

Eric Mayer/for

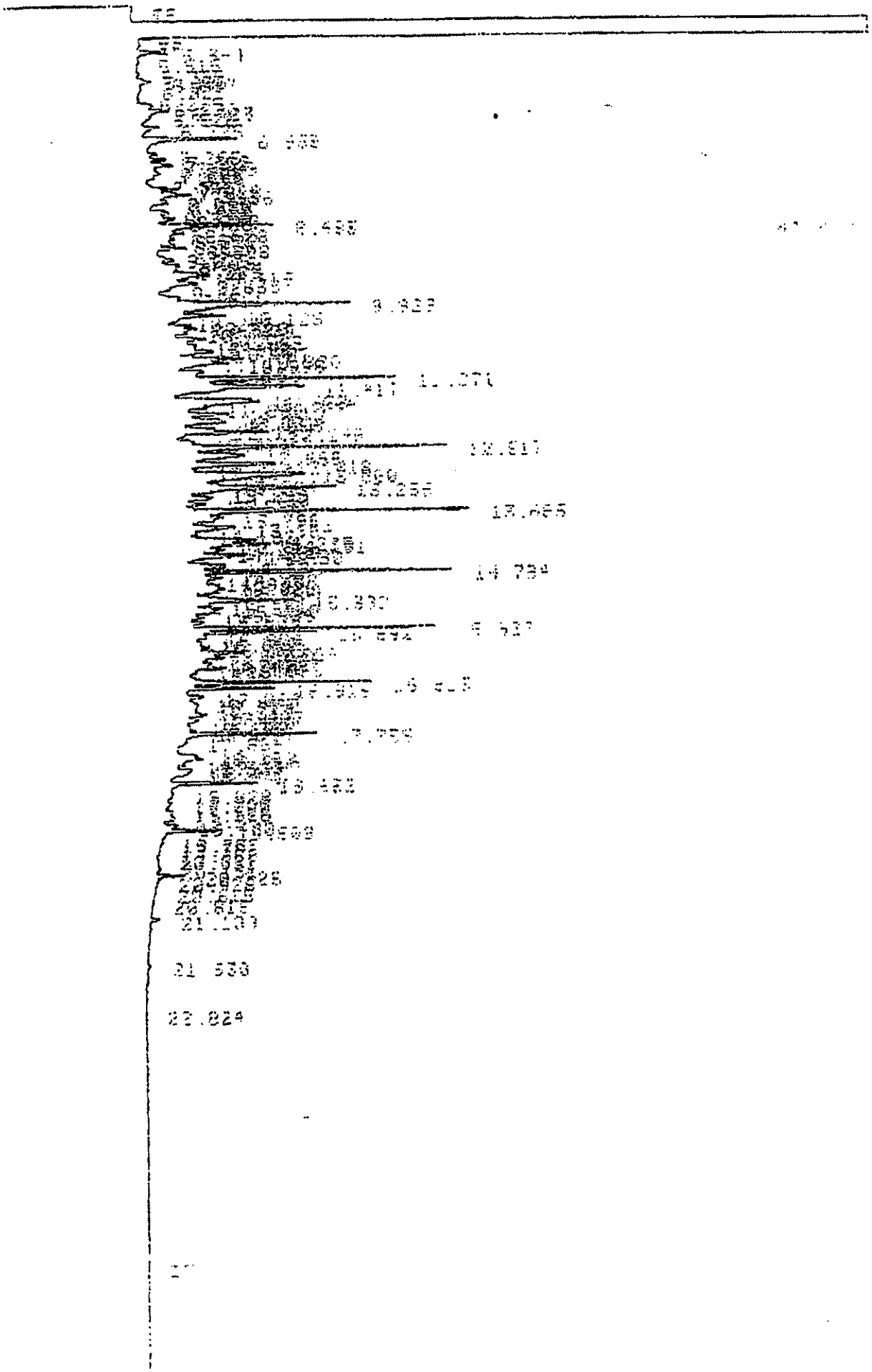
W. Keeley
atory Director

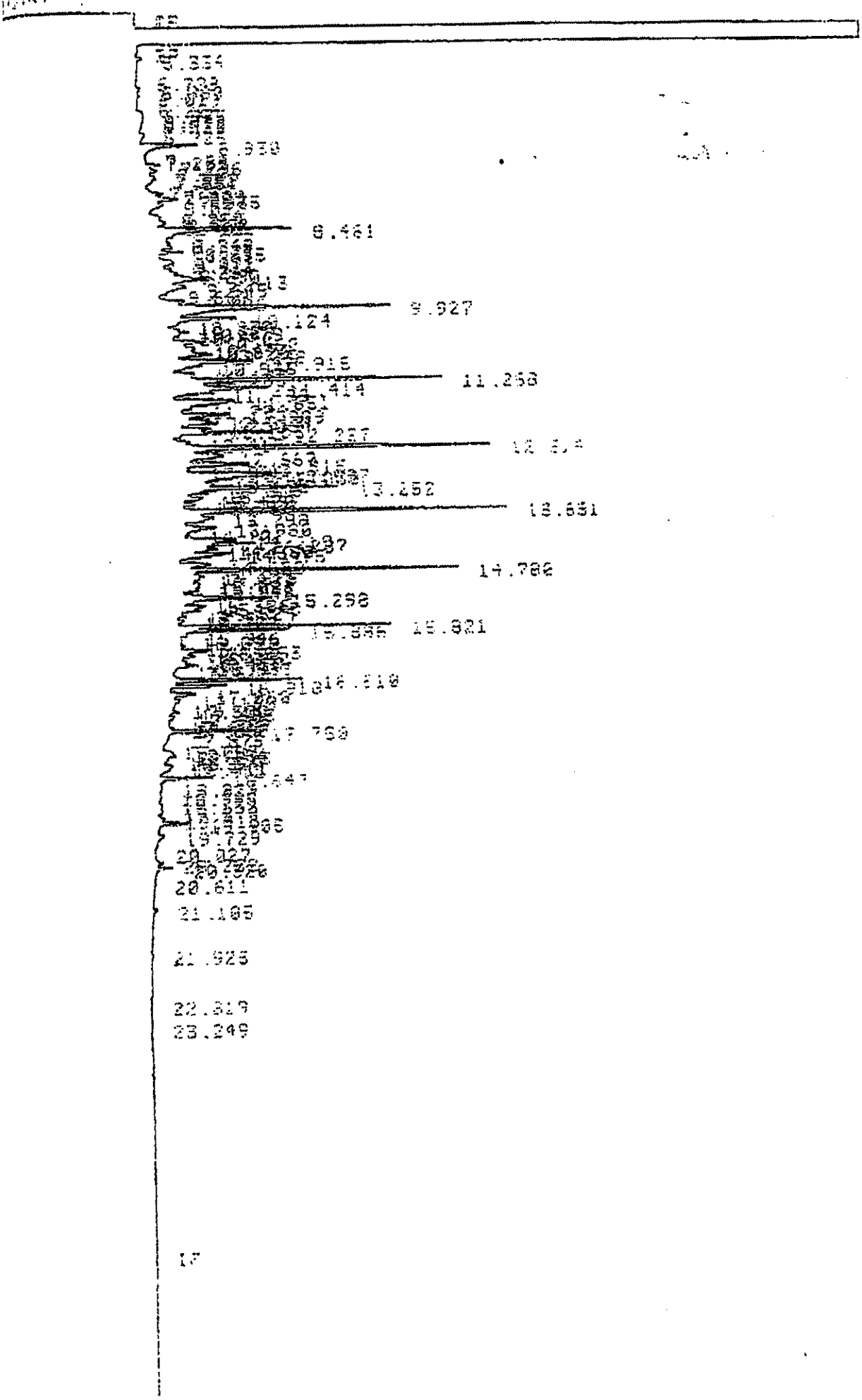
Please Note:
Samples exhibit similar diesel chromatographic pattern.

3050454.AAA <1>

PROCESSED PEAK FILE DOES NOT EXIST

5491 MAY 17, 1998 11:45:24




8.461
9.927
11.258
13.252
13.651
14.782
15.298
15.821
16.510
20.611
21.105
21.925
22.819
23.249

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental
alrway Drive
dale Heights, IL
ntion: Tom Enno

Client Project ID: Palumbo Bros.

QC Sample Group: 3050454-5

Reported: May 17, 1993

QUALITY CONTROL DATA REPORT

LYTE	TPH-Diesel
Method:	8015
Analyst:	L. Grundel
porting Units:	mg/L
ate Analyzed:	May 14, 1993
QC Sample #:	BLK3051493
mple Conc.:	N.D.
ike Conc. Added:	1,000
onc. Matrix Spike:	1,030
atrix Spike Recovery:	103
onc. Matrix pike Dup.:	1,070
atrix Spike Duplicate Recovery:	107
Relative Difference:	3.8

oratory blank contained the following analytes: None Detected

EAT LAKES ANALYTICAL

in W. Keeley
oratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100	
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100	3050454.AAA <2>

Client: Alpha Environmental

Address: 51 Fairway Dr
Glendale Hts. IL

Report to: Tom Enno

Project: Palumbo Bros.

Sampler: Tom Enno

PO #:

Phone #: FAX #:

TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY <

DATE RESULTS NEEDED: Monday P.M

TEMPERATURE UPON RECEIPT: Recd. On Ice

AIR BILL NO.

FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE DEVICE	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	SAMPLE CONTROL: CRACKED/BROKEN	SAMPLE CONTROL: IMPROPERLY SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORA ID NUM
Diesel Standard Sample #1	5-14	9:00		GW	—	1	G	Finger Print Standard				36564
Funded Area Sample #2	5-14	8:50		W	—	1	G	Contaminated Groundwater				36564

RELINQUISHED	DATE	RECEIVED	DATE	RELINQUISHED	DATE	RECEIVED
[signature]	5-14	[signature]	5/14/93			
	TIME 1:30		TIME 1:30		TIME	
RELINQUISHED	DATE	RECEIVED	DATE	RELINQUISHED	DATE	RECEIVED
	TIME		TIME		TIME	

COMMENTS: TPH Diesel per DM 5/14/93

PAGE OF

APPENDIX D

SOIL SAMPLE RESULTS & DISPOSAL PARAMETERS

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
airway Drive	Matrix Descript:	Soil	Received:	May 21, 1993
dale Heights, IL	Analysis Method:	EPA 5030/8020	Analyzed:	May 25, 1993
tion: Tom Enno	First Sample #:	305-0757	Reported:	Jun 1, 1993

BTEX ANALYSIS (EPA 8020)

Sample Number	Sample Description	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)	Total BTEX mg/kg (ppm)
305-0757	F-1	N.D.	1.6	5.5	12	19
305-0761	W-1 S	N.D.	N.D.	0.80	1.1	1.9
ction Limits:		0.2000	0.2000	0.2000	0.6000	NA

es reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors
d additional sample dilution, detection limits for this sample have been raised.

AT LAKES ANALYTICAL

W. Keeley
ratory Director

3050757.ALP <1>

ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.		Sampled:	May 21, 1993
airway Drive	Matrix Descript:	Soil		Received:	May 21, 1993
ndale Heights, IL	Analysis Method:	EPA 5030/8020		Analyzed:	May 25, 1993
ntion: Tom Enno	First Sample #:	305-0758		Reported:	Jun 1, 1993

BTEX ANALYSIS (EPA 8020)

Sample Number	Sample Description	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)	Total BTEX mg/kg (ppm)
305-0758	W-1 E	N.D.	1.7	12	39	53
lection Limits:		1.0000	1.0000	1.0000	3.0000	NA

lytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors uired additional sample dilution, detection limits for this sample have been raised.

IEAT LAKES ANALYTICAL

vin W. Keeley
oratory Director

3050757.ALP <2>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

na Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.		Sampled:	May 21, 1993
Fairway Drive	Matrix Descript:	Soil		Received:	May 21, 1993
ndale Heights, IL	Analysis Method:	EPA 5030/8020		Analyzed:	May 25, 1993
ention: Tom Enno	First Sample #:	305-0759		Reported:	Jun 1, 1993

BTEX ANALYSIS (EPA 8020)

Sample Number	Sample Description	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)	Total BTEX mg/kg (ppm)
305-0759	W-1 W	N.D.	0.071	0.21	0.70	0.98
305-0760	W-1 N	0.089	0.095	0.67	1.3	2.2
etection Limits:		0.0500	0.0500	0.0500	0.1500	NA

nalytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors quired additional sample dilution, detection limits for this sample have been raised.

REAT LAKES ANALYTICAL

evin W. Keeley
aboratory Director

3050757.ALP <3>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
airway Drive	Sample Descript:	Soil: F-1,	Received:	May 21, 1993
dale Heights, IL	Analysis Method:	EPA 8310	Extracted:	May 24, 1993
ntion: Tom Enno	Lab Number:	305-0757	Analyzed:	May 28, 1993
			Reported:	Jun 1, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

lyte	IEPA Generic Objectives Type A Soil Cleanup Objective mg/kg (ppm)	Acceptable Det. Limits mg/kg (ppm)	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
n-Carcinogenic PNA's				
phthalene	0.025	0.66	0.67	1.9
naphthene	8.4		1.20	N.D.
hracene	42		0.66	N.D.
oranthene	5.6		1.3	5.0
orene	5.6		0.14	N.D.
ene	4.2		0.33	1.6
ier Non-Carcinogenic PNA's				
naphthylene	-		17	N.D.
zo (ghi) perylene	-		0.67	N.D.
nanthrene	-		0.66	1.5
TOTAL	4.2	-	-	1.5
cinogenic PNA's				
zo (a) anthracene	.0026	0.0087	0.067	0.78
zo (a) pyrene	.0046	0.015	0.067	0.51
zo (b) fluoranthene	.0036	0.011	0.33	0.56
zo (k) fluoranthene	.0034	0.011	0.067	0.38
ysene	.030	0.10	0.33	0.73
enzo (a,h) anthracene	.006	0.02	0.067	0.11
eno (1,2,3-cd) pyrene	.0086	0.029	0.67	0.78

nup objectives are based upon IEPA Leaking Underground Storage Tank Guidelines, February 1993.

tes reported as N.D. were not present above the stated limit of detection.

EAT LAKES ANALYTICAL

h W. Keeley
oratory Director

3050757.ALP <4>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
airway Drive	Sample Descript:	Soil: W-1 E	Received:	May 21, 1993
dale Heights, IL	Analysis Method:	EPA 8310	Extracted:	May 24, 1993
ntion: Tom Enno	Lab Number:	305-0758	Analyzed:	May 28, 1993
			Reported:	Jun 1, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

alyte	IEPA Generic Objectives Type A Soil Cleanup Objective mg/kg (ppm)	Acceptable Det. Limits mg/kg (ppm)	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
n-Carcinogenic PNA's				
phthalene	0.025	0.66	0.67	13
enaphthene	8.4		1.20	4.1
thracene	42		0.66	N.D.
uoranthene	5.6		1.3	32
uorene	5.6		0.14	7.3
rene	4.2		0.33	2.3
her Non-Carcinogenic PNA's				
cenaphthylene	-		17	N.D.
enzo (ghi) perylene	-		0.67	N.D.
enanthrene	-		0.66	16
TOTAL	4.2	-	-	16
rcinogenic PNA's				
nzo (a) anthracene	.0026	0.0087	0.067	0.41
nzo (a) pyrene	.0046	0.015	0.067	N.D.
nzo (b) fluoranthene	.0036	0.011	0.33	N.D.
nzo (k) fluoranthene	.0034	0.011	0.067	N.D.
rysene	.030	0.10	0.33	0.62
enzo (a,h) anthracene	.006	0.02	0.067	0.13
eno (1,2,3-cd) pyrene	.0086	0.029	0.67	N.D.

anup objectives are based upon IEPA Leaking Underground Storage Tank Guidelines, February 1993.

lytes reported as N.D. were not present above the stated limit of detection.

EAT LAKES ANALYTICAL

vin W. Keeley
oratory Director

3050757.ALP <5>

LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

ha Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
Fairway Drive	Sample Descript:	Soil: W-1 W	Received:	May 21, 1993
ndale Heights, IL	Analysis Method:	EPA 8310	Extracted:	May 24, 1993
ention: Tom Enno	Lab Number:	305-0759	Analyzed:	May 28, 1993
			Reported:	Jun 1, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

alyte	IEPA Generic Objectives Type A Soil Cleanup Objective mg/kg (ppm)	Acceptable Det. Limits mg/kg (ppm)	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
on-Carcinogenic PNA's				
phthalene	0.025	0.66	0.66	N.D.
enaphthene	8.4		1.20	N.D.
thracene	42		0.66	N.D.
uoranthene	5.6		0.67	2.6
uorene	5.6		0.14	N.D.
rene	4.2		0.18	1.3
ther Non-Carcinogenic PNA's				
cenaphthylene	-		8.50	N.D.
enzo (ghi) perylene	-		0.34	0.35
henanthrene	-		0.66	N.D.
TOTAL	4.2	-	-	0.35
arcinogenic PNA's				
enzo (a) anthracene	.0026	0.0087	0.034	0.92
enzo (a) pyrene	.0046	0.015	0.034	1.2
enzo (b) fluoranthene	.0036	0.011	0.17	1.1
enzo (k) fluoranthene	.0034	0.011	0.034	0.65
hrysene	.030	0.10	0.17	1.2
ibenzo (a,h) anthracene	.006	0.02	0.034	N.D.
deno (1,2,3-cd) pyrene	.0086	0.029	0.34	1.1

leanup objectives are based upon IEPA Leaking Underground Storage Tank Guidelines, February 1993.

nalytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

3050757.ALP <6>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

ha Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
Fairway Drive	Sample Descript:	Soil: W-1 N	Received:	May 21, 1993
ndale Heights, IL	Analysis Method:	EPA 8310	Extracted:	May 24, 1993
ention: Tom Enno	Lab Number:	305-0760	Analyzed:	May 28, 1993
			Reported:	Jun 1, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

alyte	IEPA Generic Objectives Type A Soil Cleanup Objective mg/kg (ppm)	Acceptable Det. Limits mg/kg (ppm)	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
n-Carcinogenic PNA's				
phthalene	0.025	0.66	0.66	N.D.
enaphthene	8.4		1.20	N.D.
thracene	42		0.66	N.D.
oranthene	5.6		0.66	N.D.
orene	5.6		0.14	N.D.
rene	4.2		0.18	N.D.
ther Non-Carcinogenic PNA's				
cenaphthylene	-		1.7	N.D.
enzo (ghi) perylene	-		0.067	N.D.
henanthrene	-		0.66	N.D.
TOTAL	4.2	-	-	N.D.
arcinogenic PNA's				
enzo (a) anthracene	.0026	0.0087	0.0087	0.022
enzo (a) pyrene	.0046	0.015	0.015	0.023
enzo (b) fluoranthene	.0036	0.011	0.033	N.D.
enzo (k) fluoranthene	.0034	0.011	0.011	0.027
hrysene	.030	0.10	0.1	N.D.
ibenzo (a,h) anthracene	.006	0.02	0.02	0.021
deno (1,2,3-cd) pyrene	.0086	0.029	0.067	N.D.

eanup objectives are based upon IEPA Leaking Underground Storage Tank Guidelines, February 1993.

alytes reported as N.D. were not present above the stated limit of detection.

REAT LAKES ANALYTICAL

evin W. Keeley
aboratory Director

3050757.ALP <7>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

ha Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
Fairway Drive	Sample Descript:	Soil: W-1 S	Received:	May 21, 1993
ndale Heights, IL	Analysis Method:	EPA 8310	Extracted:	May 24, 1993
ntion: Tom Enno	Lab Number:	305-0761	Analyzed:	May 28, 1993
			Reported:	Jun 1, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

alyte	IEPA Generic Objectives Type A Soil Cleanup Objective mg/kg (ppm)	Acceptable Det. Limits mg/kg (ppm)	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
n-Carcinogenic PNA's				
phthalene	0.025	0.66	0.67	N.D.
enaphthene	8.4		1.20	1.6
thracene	42		0.66	N.D.
oranthene	5.6		1.3	14
orene	5.6		0.14	2.4
rene	4.2		0.33	1.2
her Non-Carcinogenic PNA's				
enaphthylene	-		17	N.D.
nzo (ghi) perylene	-		0.67	N.D.
enanthrene	-		0.66	5.0
TOTAL	4.2	-	-	5.0
rcinogenic PNA's				
nzo (a) anthracene	.0026	0.0087	0.067	0.32
nzo (a) pyrene	.0046	0.015	0.067	0.079
nzo (b) fluoranthene	.0036	0.011	0.33	N.D.
nzo (k) fluoranthene	.0034	0.011	0.067	0.069
rysene	.030	0.10	0.33	N.D.
benzo (a,h) anthracene	.006	0.02	0.067	N.D.
deno (1,2,3-cd) pyrene	.0086	0.029	0.67	N.D.

anup objectives are based upon IEPA Leaking Underground Storage Tank Guidelines, February 1993.

alytes reported as N.D. were not present above the stated limit of detection.

REAT LAKES ANALYTICAL

evin W. Keeley
aboratory Director

3050757.ALP <8>

Client: Alpha Environmental

Address: 5 Highway Dr Glendale Hts IL

Report to: Tom Enno

Project: Lyons / Palumbo Bros

Sampler: Tom Enno

PO #:

Phone #: FAX #:

TAT: 5 DAY 4 DAY 3 DAY 2 DAY

DATE RESULTS NEEDED: 5/28/

TEMPERATURE UPON RECEIPT:

AIR BILL NO.

FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE DEVICE	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	CRACKED/BROKEN	IMPROPERLY SEALED	GOOD CONDITION	
E-1	5/21	4:00		S	N	1	G	BETX & PNAs			✓	3
J-1 E	5/21	4:00		S	"	1	G	" " " "			✓	3
W-1 W	5/21	4:00		S	"	1	G	" " " "			✓	3
W-1 N	5/21	4:00		S	"	1	G	" " " "			✓	3
W-1 S	5/21	4:00		S		1	G	" " " "			✓	3
Disposal Parameters	5/21	5:15		S	"	4	G	Please hold for Preservative			✓	3

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED
[signature]	5/21 6:45	Kevin Knoll	5/21 1900			
RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED

COMMENTS:

PAGE

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

na Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled: May 21, 1993
Fairway Drive	Sample Descript:	Soil: Disposal Parameters	Received: May 25, 1993
ndale Heights, IL 60137			
ntion: Tom Enno	Lab Number:	305-0762	Analyzed: May 25-27, 1993
			Reported: Jun 2, 1993

LABORATORY ANALYSIS

lyte	Detection Limit mg/kg	Sample Results mg/kg
.....	10	29
nol.....	3.0	3.1
ctive Cyanide.....	0.50	N.D.
ctive Sulfide.....	7.5	27

sh Point, Open Cup(F).....	>200
.....	9.1
nt Filter.....	Pass

ytes reported as N.D. were not present above the stated limit of detection.

EAT LAKES ANALYTICAL

vin W. Keeley
oratory Director

3050757.ALP <12>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

pha Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
Fairway Drive	Sample Descript:	Soil: Disposal Parameters	Received:	May 25, 1993
endale Heights, IL 60137	Analysis Method:	EPA 8080	Extracted:	May 25, 1993
tention: Tom Enno	Lab Number:	305-0762	Analyzed:	May 28, 1993
			Reported:	Jun 2, 1993

POLYCHLORINATED BIPHENYLS (EPA 8080)

nalyte	Detection Limit µg/kg	Sample Results µg/kg
CB 1016	350	N.D.
CB 1221	350	N.D.
CB 1232	350	N.D.
CB 1242	350	N.D.
CB 1248	350	N.D.
CB 1254	350	N.D.
CB 1260	350	N.D.

nalytes reported as N.D. were not present above the stated limit of detection.

REAT LAKES ANALYTICAL

evin W. Keeley
aboratory Director

3050757.ALP <13>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

ha Environmental, Inc.	Client Project ID:	Lyons/Palumbo Bros.	Sampled:	May 21, 1993
Fairway Drive	Sample Descript:	TCLP Extract: Disposal Parameters	Received:	May 25, 1993
ndale Heights, IL 60137	Mehtod of Analysis	EPA 8240	Extracted:	May 25, 1993
ention: Tom Enno	Lab Number:	305-0762	Analyzed:	Jun 2, 1993
			Reported:	Jun 2, 1993

TCLP VOLATILES

alyte	Detection Limit mg/L	Sample Results mg/L
nzene	0.40	N.D.
rbon tetrachloride	0.40	N.D.
lorobenzene	0.40	N.D.
loroform	0.40	N.D.
-Dichloroethane	0.40	N.D.
-Dichloroethylene	0.40	N.D.
thyl ethyl ketone	100	N.D.
rachloroethylene	0.40	N.D.
chloroethylene	0.40	N.D.
yl chloride	0.16	N.D.

alytes reported as N.D. were not present above the stated limit of detection.

REAT LAKES ANALYTICAL

vin W. Keeley
aboratory Director

3050757.ALP <14>

GREAT
LAKES
ANALYTICAL

1380 Busch Parkway • Buffalo Grove, Illinois 60089
(708) 808-7766 FAX (708) 808-7772

a Environmental, Inc.	Client Project ID: Lyons/Palumbo Bros.	Sampled:	May 21, 1993
airway Drive	Sample Descript: TCLP Extract: Disposal Parameters	Received:	May 25, 1993
dale Heights, IL 60137	Method of Analysis EPA 8270	Extracted:	May 26, 1993
ntion: Tom Enno	Lab Number: 305-0762	Analyzed:	May 28, 1993
		Reported:	Jun 2, 1993

TCLP SEMI-VOLATILES

lyte	Detection Limit mg/L	Sample Results mg/L
esol	0.020	N.D.
p-Cresol	0.020	N.D.
ol	0.020	N.D.
ichlorobenzene	0.020	N.D.
initrotoluene	0.020	N.D.
achlorobenzene	0.020	N.D.
achloro-1,3-butadiene	0.020	N.D.
achloroethane	0.020	N.D.
benzene	0.020	N.D.
achlorophenol	0.10	N.D.
line	0.10	N.D.
-Trichlorophenol	0.10	N.D.
-Trichlorophenol	0.020	N.D.

es reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors
ed additional sample dilution, detection limits for this sample have been raised.

AT LAKES ANALYTICAL

n W. Keeley
ratory Director

3050757.ALP <15>

Client: ALPHA ENVIRONMENTAL

Address: 51 FAIRWAY DRIVE
GLENDALE HEIGHTS, IL

Report to: TOM ENNO

Project: LYONS / PALUMBO BROS.

Sampler:

PO #:

Phone #: FAX #:

TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY <2

DATE RESULTS NEEDED 6/2/93

TEMPERATURE UPON RECEIPT:

AIR BILL NO.

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE DEVICE	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE	SAMPLE CONTROL: CRACKED/BROKEN	SAMPLE CONTROL: IMPROPERLY SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORAT ID NUME
1	DISPOSAL PARAMETERS	5/21/93	1715		S		4	G	SEE ATTACHED			✓	30507
2									TCLP 8 RCRA METALS				
									TCLP VOLATILES				
3									TCLP SEMI-VOLATILES				
									REACTIVE CYANIDE				
4									REACTIVE SULFIDE				
									PAINT FILTER				
5									FLASH POINT				
									PH				
6									PCB				
									TOX/EOX				
7									PHENOL				
8													
9													
10													

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
		Keeley Jankowsky	5/25/93 0800				
RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME

COMMENTS:

PAGE 1 OF 1

APPENDIX E

MANIFESTS

VAN HOESEN INDUSTRIES, INC.
1629 S. Roselle Road
Schaumburg, IL 60172
708-529-0240
FAX 708-529-0837

North Branch Environmental Company — Kellberg Oil Service

ORDER DATE	P. O. NO.	MANIFEST NO.	WORK ORDER NO.
5-12-93			22272

DRIVER Terry DATE 5-12 19 93

SOLD TO: Palumbo - Asphalt Plant

ADDRESS 8301 W. Ogden Ave

CITY, STATE Lyons, Il ZIP

PHONE NO. 547-4580 — CONTACT Mark Tubay

BILL TO

ADDRESS

CITY, STATE ZIP

PRODUCT/SERVICE	GALLONS	PRICE	AMOUNT
FREIGHT/HANDLING			
DISPOSAL	1500		
SKIM Pond			
Contact			
Larry Mack			

x Larry Mack
Customer's Signature

VOLUME BULK GALS. DRUMS

Generator #

incident # 931154

VAN HOESEN INDUSTRIES, INC.
1629 S. Roselle Road
Schaumburg, IL 60172
708-529-0240
FAX 708-529-0837

North Branch Environmental Company — Kellberg Oil Service

ORDER DATE	P. O. NO.	MANIFEST NO.	WORK ORDER NO.
7-1-93			23379

DRIVER TS DATE 7/1 19 93

SOLD TO Kellberg Oil

ADDRESS Ogden Ave

CITY, STATE Lyons Il ZIP

PHONE NO. 447-6533 CONTACT Mark

BILL TO

ADDRESS

CITY, STATE ZIP

PRODUCT/SERVICE	GALLONS	PRICE	AMOUNT
FREIGHT/HANDLING			
DISPOSAL	985		

X Gary Mark
Customer's Signature

VOLUME BULK GALS. DRUMS

Generator #

VAN HOESEN INDUSTRIES, INC.
1629 S. Roselle Road
Schaumburg, IL 60172
708-529-0240
FAX 708-529-0837

North Branch Environmental Company • Kellberg Oil Service

ORDER DATE	P. O. NO.	MANIFEST NO.	WORK ORDER NO.
6-16-93			22235

DRIVER WM DATE 6-17 19 93

SOLD TO Palermo

ADDRESS Ogden Ave

CITY, STATE Lyons, Il ZIP

PHONE NO. 708-544-9440 CONTACT Mark

BILL TO

ADDRESS

CITY, STATE ZIP

PRODUCT/SERVICE	GALLONS	PRICE	AMOUNT
FREIGHT/HANDLING			
DISPOSAL	636		
[illegible]			

X Larry Martin
Customer's Signature

VOLUME BULK GALS. DRUMS

Generator #

APPENDIX E

DAI CACR

0311715020 - Cook
Material Service Corp
Dist

Material Service Corporation

Environmental Services Department
4226 Lawndale
Lyons, Illinois 60534-1199
708/442-4608
FAX: 708/442-0294

March 25, 1996

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Section
Division of Land Pollution Control
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

RECEIVED
MAR 26 1996
IEPA/DLPC

Re: 45-Day Certification
Material Service Corporation - Yard 18
IEMA Incident Number 951401

Dear Sir:

Enclosed, please find the *IEPA 45-Day Report and Professional Engineer Certification* form for the above referenced incident number.

Should you have any questions regarding this matter, please do not hesitate to contact me or Mark Strack of my staff at 708/442-4608, at your convenience.

Sincerely,

MATERIAL SERVICE CORPORATION

Frank M. Werderitsch
Director, Environmental Services

FMW:et
encl.

SCREENED
APR - 4 1996
DJH

45DAYRPT.Y18

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DAI ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 708.498.6810
Fax 708.498.6911

One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062-1569

45-DAY REPORT
MATERIAL SERVICES CORPORATION
YARD 18

IEMA INCIDENT # 951401
January 29, 1996

RECEIVED
MAR 26 1996
IEPA/DLPC

Prepared for:
Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program

Prepared by:
DAI Environmental, Inc.
Northbrook, Illinois

Chicago · Tampa · Los Angeles

Pursuant to 35 Illinois Administrative Code Section 731.163 or 732.202, the following information must be submitted within 45 Days after a release is reported.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
45 Day Report

A. Site Identification

IEMA Incident # (if any): 951401 IEPA Generator # (if any): 0311715020

Site Name: Material Service Corporation - Yard 18

Site Address (No. P.O. Box): 4226 Lawndale Avenue

City: Lyons County: Cook

B. Release Information

1. Indicate the material(s) released: Diesel Fuel, Gasoline

RECEIVED
MAR 26 1996
IEPA/DLPC

2. The material released was (check all that apply):

   a. Petroleum X
   b. Nonpetroleum ___

3. Is there information included herewith (beyond what is required in the 45 Day Report) that is intended to demonstrate no further remediation to be necessary (with or without a request for Site Specific Objectives)? Yes ___ No X

C. Early Action

1. What was the volume (in cubic yards) of backfill material and/or native soil removed? 445
   (If any backfill material and/or native soil was removed and disposed of off-site attach a legible copy of the manifest(s)).

2. Was groundwater encountered at the site? Yes X No ___
   If Yes, was any groundwater removed or discharged from the site? Yes ___ No X
   If Yes, what was the volume removed from the site? ___
   Include a legible copy of the manifest(s)) or permits.

3. Was free product encountered? Yes ___ No X
   If Yes, the owner/operator must submit a free product removal report within 45 days of reporting the release.

D. Site Information

1. Data on the nature and estimated quantity of the release.

2. Data from available sources or site investigations concerning the following factors:

   a. Surrounding populations,
   b. Water quality,
   c. Use and approximate locations of wells potentially affected by the release,
   d. Subsurface soil conditions,
   e. Climatological conditions,
   f. Land use.

3. A discussion of what was done to measure for the presence of a release where contamination was most likely to be present at the UST site.
4. Results of the free product investigations.

5. A discussion of the action taken to prevent further release of the regulated substance into the environment.

6. A discussion of the action taken to mitigate fire and safety hazards posed by vapors or free product that has migrated from the UST excavation zone and entered subsurface structures.

7. Any other information collected while performing initial abatement measures pursuant to 35 Ill. Adm. Code Section 732.162 or 732.202(b).

E. Supporting Documentation

1. Site and area maps (at a minimum should contain).

   a. Site map to scale and oriented north showing:

      i. UST(s) system(s) and excavation,
      ii. Product and dispenser lines,
      iii. Pump and islands,
      iv. Underground utilities (sewer, gas, water, etc.),
      v. Nearby structures (buildings, roads, etc.)
      vi. Soil boring(s) (if present),
      vii. Monitoring well(s) and/or sumps (if present),
      viii. Property boundaries;

   b. A cross section, to scale, with dimensions showing the UST(s) and the excavation; and

   c. An area map showing the site in relation to surrounding properties. This map should identify the facilities on the surrounding properties.

2. UST(s) information (which must be in a tabular format and at a minimum should include):

   a. total number of UST(s) on site,
   b. the volume of the UST(s) (in gallons),
   c. the material stored in the UST(s),
   d. identification of UST system(s) that had a release,
   e. identification of UST system(s) that were repaired, removed, or abandoned-in-place,
   f. a copy of the Office of the State Fire Marshal Permit for Removal, Abandonment-In-Place or other OSFM permits or notifications.

3. Provide a narrative of tank removal and cleaning operations; describe how wastes generated during the tank removal were managed, treated, and disposed.

4. Photographs.

F. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator

Name: Frank M Werderitsch

Title: Director, Environmental Svcs.

Address: 4226 Lawndale Avenue

Lyons, IL 60534

Phone: 708/442-4601

Signature: Frank M. Werderitsch

Date: 3-25-96

Registered Professional Engineer

Name: Warren Jensen

Title: General Manager Engineering

Address: 4226 S. Lawndale Avenue

Lyons, IL 60534

Phone: (708)442-4657

Signature: Warren Jensen

Date: 3-25-96

062-043218 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Consultant

Firm:

Contact:

Title:

Address:

Phone:

Signature:

Date:

RECEIVED
MAR 26 1996
IEPA/DLPC

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/27 - 5/17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44.1). This form has been approved by the Forms Management Center.

RECEIVED
MAR 26 1996
IEPA/DLPC

SECTION D. - SITE INFORMATION

1 The estimated quantity of the releases is unknown.

2a The surrounding population is not a receptor of groundwater under the site. Drinking water is supplied by the City of Chicago from Lake Michigan. The surrounding area is mixed residential/commercial.

2b Minor amounts of perched groundwater were encountered at the Ogden/Lawndale excavation; no groundwater was encountered at the Haffner excavation.

2c A total of 9 wells were found within the maximum allowable setback distance of 2500-feet. Of the 9 wells, an exact location could not be determined for 3, using the ISWS database. The well log from the ISWS is given in Appendix D. The locations of the wells are shown in Figure 1 (see Appendix D).

2d Due to release of petroleum hydrocarbons, some of the subsurface soils were impacted.

2e The climatological conditions at the time of the UST removals on June 27 and 28, 1995 are as follows: temperatures between 74 and 79 degrees Fahrenheit, partly cloudy, with slight breeze from the west.

2f The land use at the Ogden and Lawndale removal site is a former service station, currently a vacant lot; the Haffner removal location is a vehicle staging area.

3 Emergency action soil remediation was initiated by excavating hydrocarbon impacted soils three feet beyond the USTs at Ogden/Lawndale and Haffner. A soil investigation will proceed at a later date when a work plan and budget has been approved by the IEPA. A total of 445-yd^3 of soil has been removed from both sites for off-site treatment.

4 No free product was encountered at the removal sites.

5 Pumpable fluids were removed and taken off site for treatment. Both the UST and ancillary piping were removed.

Materials exhumed to facilitate vessel removal were placed on Visqueen and disposed as a Special Waste. Additional fill needed to bring the excavation to grade was placed into the excavation.

The vessels were hauled off site as scrap.

6 Material Service Corporation (MSC) contracted Gerry Bernardo, Marine Chemist from Waterways Transportation Service (WTS), to perform monitoring of tank opening activities. MSC monitored for vapors in the work zone. Deputy Fire Chief Norb of the Lyons Fire Department was on hand to oversee UST removal operations.

The USTs were inerted by filling to >95% CO_2 before being removed from the excavation. The vessels were again filled with >95% CO_2, WTS issued a certificate for safe hot work, and each vessel end was opened with a cutting torch. See Appendix B for WTS Hot Work Certificates.

CO_2 in the vessels was allowed to naturally dissipate. Workers were not permitted to enter the vessels until the internal atmosphere was monitored and found to be safe.

The vessels were hauled off site as scrap.

7 None.

SECTION E. - SUPPORTING DOCUMENTATION

Figures 2a, 2b, 3, and 4 are in Appendix B.

1a Figures 2a and 2b show the Ogden/Lawndale and Haffner removal sites, respectively. Figure 4 shows the two sites with respect to one another.

Soil borings were conducted at the Ogden/Lawndale site to determine the extent of the excavation as part of the Phase II Subsurface Investigation. The soil boring locations are shown in Figure 2a. Of the 11 soil borings, 4 were found to contain elevated levels of BTEX and/or PNAs. The Phase II Subsurface Investigations are given in Appendix F.

1b Figure 3 shows the cross section of the UST excavation and tank dimensions for the Ogden/Lawndale and Haffner sites.

1c Figure 4 shows an area map of the site identifying facilities on surrounding properties.

2 UST Information:

UST Location	Size (gallons)	Material Stored	Release? Y or N	Fate of UST	OSFM Forms
Haffner	6,000	Diesel Fuel	N	Removed	App A
Ogden/Lawndale	1,000	Gasoline	Y	Removed	App A
Ogden/Lawndale	1,000	Gasoline	Y	Removed	App A
Ogden/Lawndale	1,000	Gasoline	Y	Removed	App A
Ogden/Lawndale	6,000	Gasoline	N	Removed	App A
Ogden/Lawndale	3,000	Gasoline	Y	Removed	App A

3 Timetable and narrative of work performed:

DATE	ACTIVITY
06/27/95	At the Ogden and Lawndale site, the USTs and ancillary piping were removed by Producers Construction, a division of MSC. No tank fluids were removed. At the Haffner site, approximately 4,050-gallons of tank fluids were removed prior to tank removal. Material Service Corporation (MSC) contracted Gerry Bernardo, Marine Chemist from Waterways Transportation Service (WTS), to perform monitoring of tank opening activities. MSC monitored for vapors in the work zone. No OSFM Tank Specialist was on hand to oversee UST removal operations, however, permission to continue was given by Jan Spoor at the OSFM Springfield Office. Deputy Fire Chief Norb of the Lyons Fire Department was present during the tank removal.

The USTs were inerted by filling to >95% CO_2 before being removed from the excavation. The vessels were again filled with >95% CO_2, WTS issued a certificate for safe hot work, and each end was opened with a cutting torch.

CO_2 in the vessels was allowed to naturally dissipate. Workers were not permitted to enter the vessel until the internal atmosphere was monitored and found to be safe. Sludge/heals were transferred into a DOT-approved drum and placed at a secure location on site by Producers Construction.

A release was evident and soil contamination from the release was found to be in contact with water in the excavation.

06/28/95 The Haffner site tank was removed following the procedures described above. The vessels from both site were hauled off site as scrap.

4 Photographs of tank removal activities are shown in Appendix G.

LIST OF APPENDICES

OSFM NOTIFICATION FORMS . . . . . A
WTS HOT WORK CERTIFICATE . . . . . B
WASTE MANIFEST C
ISWS DATABASE INFORMATION AND WELL LOCATION MAP . . . . . D
FIGURES 2a, 2b, 3, 4 . . . . . E
PHASE II SUBSURFACE INVESTIGATION . . . . . F
PHOTOGRAPHS . . . . . G

APPENDIX A

OSFM NOTIFICATION FORMS

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OFFICE OF THE ILLINOIS STATE FIRE MARSHAL
Division of Petroleum and Chemical Safety
1035 Stevenson Drive
Springfield, Illinois 62703-4259

MAY 23 1995
DIV. OF PETROLEUM & CHEMICAL SAFETY

FOR OFFICE USE ONLY
Facility # 2-020158
Permit # 1104-95 REM

Application for Permit to REMOVE
Underground Storage Tanks for Petroleum and Hazardous Substances

To be completed and filed with the Division of Petroleum and Chemical Safety, 1035 Stevenson Drive, Springfield, Illinois 62703-4259 (217/785-5878) or (217/785-1020)

1) (Owner of tanks) - Corporation, partnership or other business entity: (Must Be Mailing Address)

MATERIAL SERVICE CORPORATION
Name

222 N. LaSALLE STREET
Street Address

CHICAGO | IL | 60601-1090
City | State | Zip

GARY O'TOOLE | (708) 442-4604
Contact Person | Phone

2) (Facility) - name and address where tanks are located:

MATERIAL SERVICE CORPORATION - YARD 18
Name

4226 Lawndale Avenue
Street Address

LYONS | IL | 60534 | COOK
City | State | Zip | County

Mark Strack | (708) 442-4608
Contact Person | Phone

Facility Registration I.D. Number

2020158

3) (Contractor) - person, firm or company performing work: PRODUCERS CONSTRUCTION

a DIVISION OF MATERIAL SERVICE CORPORATION
Name

4226 Lawndale Avenue
Street Address

Lyons | IL | 60534 | COOK
City | State | Zip | County

(708) 442-4604 | 362-11-7346
Phone | Registration No.

IL 435 | 7-14-95

You must notify ESDA 1-800-782-7860 within 24 hours of leaks or contaminated soil. Removal must be in accordance with acceptable closure requirements and procedure such as API Bulletin 1604. A site assessment must be conducted to determine if a release has occurred.

FOR OFFICE USE ONLY

Permission to remove underground storage tank(s) is hereby granted. Such removal shall not commence until 6-22-95. A seventy-two hour (3 working day) notice to this office is required to confirm final date of removal for our inspector to be on site.

5-25-95 | W. Dale Trimble
Approval Date | Approved

11-25-95
Permit Expires

4) Removal of Tanks:

a) Number and size of tanks being removed: (3) 3,000 Gallon Gasoline USTs and (1) 8,000 DIESEL UST

b) Total number of all tanks removed: 4

c) Reason for removal of tanks: No Longer Needed

d) If tank is leaking, give ESDA incident number:

e) What products were stored in each tank? Gasoline in each 3,000 gal. tank; Diesel in the 8,000 gal tank.

f) If tanks contain products other than petroleum products, please indicate here: N/A

g) Date each tank was last used? 11/30/78 for each 3,000 Gallon UST. 8,000 Gallon UST will be used until removal commences.

h) A written notice of removal of tanks shall be given to the Office of the State Fire Marshal at least 30 days prior to the removal, giving location, number and size of tanks. This application will constitute that 30 day written notice. The 30 day period commences with this application appropriately completed and the fee received in our office.

(Over)

5) Insufficient information supplied for permit review or omission of permit fee is grounds for application rejection. No work is to commence without a granted permit in hand and must be available upon request of inspectors. All work must be done by contractors registered with the State Fire Marshal's Office or by the tank owner only.

6) A permit fee of $100 for each facility must accompany this application. (Checks or money orders are to be made payable to Office of the State Fire Marshal, do not send cash.) [X] Check [ ] Money Order

7) For each facility, [redacted] - Notification of Underground Storage Tanks must be completed and submitted to the Office of the State Fire Marshal after tanks are removed.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that all submitted information is true, accurate and complete.

Name of Authorized Representative: Gary O'Toole Title and Company Represented: PROJECT MANAGER, : PRODUCERS CONSTRUCTION

Signature of Authorized Representative: Gary W. O'Toole Date: 5-16-95

Date: _____

The Office of the State Fire Marshal is requesting information that is necessary to accomplish the statutory purpose as outlined in Illinois Revised Statutes, Chapter 127½, Paragraph 9. Disclosure of this information is REQUIRED. Failure to provide any information will result in this form not being processed. This form has been approved by Forms Management Center. (Rev. 04/92) #5352

For Office Use

UPCE Specialist Dwyer
Fire Department
Division File
Dale Tanks
Office Associate JS

FILE COPY

Material Service Corporation

Environmental Services Department
4228 Lawndale
Lyons, Illinois 60534-1199
708/442-4603
FAX: 708/442-0294

September 26, 1995

Office of the Illinois State Fire Marshal
Division of the Petroleum & Chemical Safety
1035 Stevenson Drive
Springfield, IL 62703-4259

Re: Notification Form for Underground Storage Tanks
Material Service Corporation - Yard 18
Facility ID #2020158

Dear Sir;

Enclosed, please find an OSFM Notification Form for Underground Storage Tanks indicating three additional USTs bringing the site total to 9 USTs; of which 6 have been recently removed. Also enclosed is a check for *late registration fees, totaling $1800,* for the above referenced facility.

Please note that tanks, MSC18-4 and MSC18-5, were originally registered as having capacities of 3,000 gallons. Upon removal, the tanks were discovered to have capacities of 1,000 gallons each.

Also, please note that tanks MSC18-7 and MSC18-8 were not permitted for removal due to the fact that the tanks were first discovered immediately adjacent to tanks MSC18-3, MSC18-4, and MSC18-5, which were originally permitted for removal under OSFM Permit #1106-95. Tanks MSC18-7 and MSC18-8 were completely exposed and falling into the excavation as a result of exposing and removing MSC18-3, MSC18-4, and MSC18-5. As such, tanks MSC18-7 and MSC18-8 were removed along with MSC 18-3, MSC18-4, and MSC18-5. This Notification Form serves both to register MSC18-7 and MSC18-8, and notify your office of their removal.

A call was placed to the OSFM's office in Springfield, and your office authorized us to proceed with the removal of the USTs without waiting for an OSFM field inspector to arrive on-site. However, all tank removals were done so in the presence of Fire Chief Nord of the Lyons Fire Department.

Printed on recycled paper

Should you have any questions regarding this matter, please do not hesitate to contact me or Mark Strack of my staff at 708/442-4608, at your convenience.

Sincerely,

MATERIAL SERVICE CORPORATION

Frank M. Werderitsch /HWO

Frank M. Werderitsch
Director, Environmental Services

FMW:et
cc: M. Strack

bcc: G. O'Toole
J. Urbancic

IL Notification for Underground Storage Tanks

- A separate form must be used for each site.
- If you have more than five tanks, photocopy pages 1-5 and attach to this notification form.
- Please type, or print in ink; the signature under "certification" (section IX) must be signed in ink.

OFFICE USE ONLY
ID NUMBER
DATE RECEIVED

Facility I.D. # (if known) 2020158 Owner I.D. # (if known) _____

TYPE OF NOTIFICATION

☐ New Facility ☒ Amended (Changes/Corrections/Additional Tanks) Mark all that apply:

___ Owner Address Change (this facility only)
___ Owner Address Change (all facilities owned)
___ New Owner
X Tank(s) Removed (Permit # 1106-95 REM)
___ Tanks Relined (Permit # ___)
___ Tanks Installed (Permit # ___)
___ Tanks Upgraded/Repaired (Permit # ___)
___ Abandonment Notice (Permit # ___)
X Other Additional Tanks

I. Ownership of Tank(s)

MATERIAL SERVICE CORPORATION
Owner Name (Corp., Individual, Public Agency or other Entity)
222 N. LaSALLE STREET
Mailing Address
Chicago IL 60601
City State Zip
COOK
County
FRANK M. WERDERITSCH (708) 442-4601
Contact Name (Area Code) Phone

II. Location of Tank(s) (if same as Section I, Mark box) ☐

MATERIAL SERVICE CORPORATION - YARD 18
Facility Name or Company Site Identifier, as applicable
4226 S. Lawndale Avenue
Street Address or State Road, as applicable (exact address)
Lyons IL 60534
City State Zip
COOK
County
JAMES GOLDBERG 708/442-9014
Contact Name (Area Code) Phone

III. TYPE OF OWNERSHIP (mark all that apply)

☒ Current Owner of Tanks
Date Purchased 4 / 14 / 39
☐ Former Owner
☐ Ownership Uncertain ___
☐ Other ___

IV. TYPE OF FACILITY

Type of Facility: (Circle correct code)

A. Service Station
B. Bulk Plant
C. Petroleum Distributor
D. Convenience Store
E. Auto Dealer
F. Commercial/Retail
(G) Industrial/Manufacturing
H. Private Institution
I. Residence (Non-Farm)
J. Farm
K. Airport
L. Marina
M. City/Town
N. County
O. State
P. Federal (Military)
Q. Federal (Non-Military)
R. School District
S. Port District
T. Utility District
U. Fire Dept.
V. Other Special Service Districts
W. Other ___ (Please Specify)

V. Description of Underground Storage Tanks (Complete entire column for each tank)					
Tank Identification Number	Tank No.___	Tank No.___	Tank No.___	Tank No.___	Tank No.___
1. Status of Tanks	MSC18-3	MSC18-4	MSC18-5	MSC-6	MSC-7
Currently in use	☐	☐	☐	☐	☐
Temporarily out of use (Section 2 must be completed)	☐	☐	☐	☐	☐
Permanently out of use (Section 2 must be completed)	☐	☐	☐	☐	X
Removed (Section 3 must be completed)	X	X	X	X	X
Abandoned in place (Section 4 must be completed)	☐	☐	☐	☐	☐
2. Tanks Permanently & Temporarily Out of Use Estimated date last used	11 / 30 / 78	11 / 30 / 78	11 / 30 / 78	N/A 6 / 27 / 95	11 / 30 / 78
3. Tanks Removed Date tank(s) removed	6 / 27 / 95	6 / 27 / 95	6 / 27 / 95	6 / 28 / 95	6 / 27 / 95
Estimated date last used	11 / 30 / 78	11 / 30 / 78	11 / 30 / 78	6 / 27 / 95	11 / 30 / 78
4. Abandoned In Place Date tanks filled	N/A / /	N/A / /	N/A / /	N/A / /	N/A / /
Tank filled with:					
Inert materials (sand, etc.)	☐	☐	☐	☐	☐
Water	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other (please specify)					
5. Age of Tank Date tank installed	5 / 10 / 57	5 / 10 / 57	5 / 10 / 57	4 / 25 / 51	5 / 10 / 57
Date product placed in tank	5 / 11 / 57	5 / 11 / 57	5 / 11 / 57	4 / 26 / 51	5 / 11 / 57
6. Estimated Total Capacity (gallons)	3,000	1,000	1,000	8,000	1,000
7. Substances Currently or Last Stored:					
Petroleum					
Diesel	☐	☐	☐	X	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline	X	X	X	☐	X
Used oil	☐	☐	☐	☐	☐
Other (Please specify)					
Petroleum Use (if applicable):					
Heating oil (consumptive use on premises)	☐	☐	☐	☐	☐
Back-up generator	☐	☐	☐	☐	☐
Other (please specify)					
Hazardous Substance:					
Name of principal CERCLA substance					
Chemical Abstract Service (CAS No)					

V. Description of Underground Storage Tanks (Complete entire column for each tank)

Tank Identification Number	Tank No.___	Tank No.___	Tank No.___	Tank No.___	Tank No.___
1. Status of Tanks	MSC-8	MSC-9			
Currently in use	☐	☒	☐	☐	☐
Temporarily out of use (Section 2 must be completed)	☐	☐	☐	☐	☐
Permanently out of use (Section 2 must be completed)	☒	☐	☐	☐	☐
Removed (Section 3 must be completed)	☒	☐	☐	☐	☐
Abandoned in place (Section 4 must be completed)	☐	☐	☐	☐	☐
2. Tanks Permanently & Temporarily Out of Use Estimated date last used	11/30/78	N/A / /	/ /	/ /	/ /
3. Tanks Removed Date tank(s) removed	6/27/95	N/A / /	/ /	/ /	/ /
Estimated date last used	11/30/78	/ /	/ /	/ /	/ /
4. Abandoned in Place Date tanks filled	N/A / /	N/A / /	/ /	/ /	/ /
Tank filled with:					
Inert materials (sand, etc.)	☐	☐	☐	☐	☐
Water	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other (please specify)					
5. Age of Tank Date tank installed	5/10/57	5/10/57	/ /	/ /	/ /
Date product placed in tank	5/11/57	5/11/57	/ /	/ /	/ /
6. Estimated Total Capacity (gallons)	6,000	8,000			
7. Substances Currently or Last Stored:					
Petroleum					
Diesel	☐	☒	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline	☒	☐	☐	☐	☐
Used oil	☐	☐	☐	☐	☐
Other (Please specify)					
Petroleum Use (if applicable):					
Heating oil (consumptive use on premises)	☐	☐	☐	☐	☐
Back-up generator	☐	☐	☐	☐	☐
Other (please specify)					
Hazardous Substance:					
Name of principal CERCLA substance					
Chemical Abstract Service (CAS No)					

VI. Description of Underground Storage Tanks (Complete entire column for each tank)					
Tank Identification Number	Tank No.___	Tank No.___	Tank No.___	Tank No.___	Tank No.___
1. Material of Construction (mark all that apply)	MSC18-3	MSC18-4	MSC18-5	MSC18-6	MSC-7
Asphalt coated or bare steel	[X]	[X]	[X]	[X]	[X]
Cathodically protected steel	[ ]	[ ]	[ ]	[ ]	[ ]
Dielectric coated steel	[ ]	[ ]	[ ]	[ ]	[ ]
Composite (steel with fiberglass)	[ ]	[ ]	[ ]	[ ]	[ ]
Fiberglass reinforced plastic	[ ]	[ ]	[ ]	[ ]	[ ]
Lined interior	[ ]	[ ]	[ ]	[ ]	[ ]
Double-walled	[ ]	[ ]	[ ]	[ ]	[ ]
Secondary containment	[ ]	[ ]	[ ]	[ ]	[ ]
Steel STI-P3	[ ]	[ ]	[ ]	[ ]	[ ]
Other (please specify)	___	___	___	___	___
2. Piping Materials (mark all that apply)					
Bare steel	[X]	[X]	[X]	[X]	[X]
Galvanized steel	[ ]	[ ]	[ ]	[ ]	[ ]
Fiberglass reinforced plastic	[ ]	[ ]	[ ]	[ ]	[ ]
Cathodically protected	[ ]	[ ]	[ ]	[ ]	[ ]
Double-walled	[ ]	[ ]	[ ]	[ ]	[ ]
Secondary containment	[ ]	[ ]	[ ]	[ ]	[ ]
Dielectric coating	[ ]	[ ]	[ ]	[ ]	[ ]
Other (please specify)	___	___	___	___	___
3. Piping Type (mark all that apply)					
European suction	[X]	[X]	[X]	[X]	[X]
American suction	[ ]	[ ]	[ ]	[ ]	[ ]
Pressure	[ ]	[ ]	[ ]	[ ]	[ ]
Gravity feed	[ ]	[ ]	[ ]	[ ]	[ ]
Other (please specify)	___	___	___	___	___

VI. Description of Underground Storage Tanks (Complete entire column for each tank)					
Tank Identification Number	Tank No.___	Tank No.___	Tank No.___	Tank No.___	Tank No.___
1. Material of Construction (mark all that apply)	MSC-8	MSC-9			
Asphalt coated or bare steel	X	X			
Cathodically protected steel					
Dielectric coated steel					
Composite (steel with fiberglass)					
Fiberglass reinforced plastic					
Lined interior					
Double-walled					
Secondary containment					
Steel STI-P3					
Other (please specify)					
2. Piping Materials (mark all that apply)					
Bare steel	X	X			
Galvanized steel					
Fiberglass reinforced plastic					
Cathodically protected					
Double-walled					
Secondary containment					
Dielectric coating					
Other (please specify)					
3. Piping Type (mark all that apply)					
European suction	X	X			
American suction					
Pressure					
Gravity feed					
Other (please specify)					

Tank Identification Number	Tank No. MSC18-3		Tank No. MSC18-4		Tank No. MSC18-5		Tank No. MSC18-6		Tank No. MSC-7	
. Release Detection (Mark all that apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Manual tank gauging	X		X		X		X		X	
Inventory controls										
Automatic tank gauging										
Vapor monitoring										
Groundwater monitoring										
Interstitial monitoring double-walled tank/piping										
Interstitial monitoring /secondary containment										
Tank tightness testing										
Automatic line leak detector										
Line tightness testing										
Automatic shut-off device										
Continuous alarm system										
No requirements (european suction)		X		X		X		X		X
Other (please specify)										
5. Corrosion Protection (mark all that apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Cathodic protection										
Impressed current										
Secondary containment										
Exterior coating										
Fiberglass reinforced plastic										
Double-walled										
Interior lining										
Other (please specify)	NONE		NONE		NONE		NONE		NONE	
6. Spill & Overfill Prevention (Mark all that apply)										
Overfill device										
Automatic shut-off										
Overfill Alarm										
Ball float valve										
Spill containment device										
Other (Please specify)	NONE		NONE		NONE		NONE		NONE	

Tank Identification Number	Tank No. MSC-8		Tank No. MSC-9		Tank No.		Tank No.		Tank No.	
Release Detection (Mark all that apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Manual tank gauging	X		X							
Inventory controls										
Automatic tank gauging										
Vapor monitoring										
Groundwater monitoring										
Interstitial monitoring double-walled tank/piping										
Interstitial monitoring /secondary containment										
Tank tightness testing										
Automatic line leak detector										
Line tightness testing										
Automatic shut-off device										
Continuous alarm system										
No requirements (european suction)										
Other (please specify)										
Corrosion Protection (mark all that apply)	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping	Tank	Piping
Cathodic protection										
Impressed current										
Secondary containment										
Exterior coating										
Fiberglass reinforced plastic										
Double-walled										
Interior lining										
Other (please specify)	NONE		NONE							
Spill & Overfill Prevention (Mark all that apply)										
Overfill device										
Automatic shut-off										
Overfill Alarm										
Ball float valve										
Spill containment device										
Other (Please specify)	NONE		NONE							

VII. Certification of Compliance (Complete for all new, upgraded and relined tanks at this location)

Installation (mark all that apply)					
Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
Installer certified or licensed by implementing agency	☐	☐	☐	☐	☐
Installer registered by implementing agency	☐	☐	☐	☐	☐
Installer is the owner of the tank(s)	☐	☐	☐	☐	☐
Installation inspected by a registered engineer	☐	☐	☐	☐	☐
Installation inspected & approved by implementing agency	☐	☐	☐	☐	☐
Manufacturer's installation checklists have been completed	☐	☐	☐	☐	☐
Another method allowed by state agency (please specify)					

OATH: I certify the information that is provided in section VII is true to the best of my knowledge, and certify that the installation was performed in accordance with all applicable state and federal laws and regulations. **(THIS SECTION MAY ONLY BE COMPLETED BY THE CONTRACTOR. SEPARATE OATH MUST BE SUBMITTED FOR EACH ACTIVITY PERFORMED BY DIFFERENT CONTRACTOR.)**

Tank No. _____ Permit No. _____

Contractor: _____ _____ _____
Name Signature (must be original) Date

_____ _____
Position Company

VIII. Financial Responsibility

Mark all that apply:

☐ Self-Insurance ☐ Guarantee ☐ Certificate of Deposit

☐ Commercial Insurance ☐ Surety Bond ☐ Trust Fund

☐ Risk Retention Group ☐ Letter of Credit ☐ Other Method Allowed

(please specify) _____

IX. Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

FRANK M. WERDERITSCH
Director, Environmental Services

Frank M. Werderitsch /HWO 10/5/95

Name and official title of owner or owner's authorized representative (print) | Signature (must be original) | Date Signed

Material Service Corporation

Check No. 157935

P.O. No.	Invoice No.	Date	Voucher No.	Amount	Cash Discount	Net Remittance
666666	LATE FEES	09/29/95	092044	1,800.00		1,800.00
CHECK TO	E. TRAVIS--ENV	SERVICE--YARD 18				
			Totals	1,800.00	.00	1,800.00

RECEIVED
OCT 03 1995
ENVIRONMENTAL SERVICES

056379 — Vendor No.
09/30/95 — Check Dated

Material Service Corporation
222 North LaSalle Street
Chicago, Illinois 60601

The First National Bank of Chicago - 0710
Chicago, Illinois

No. 157935
70-2322
719

09/30/95

$*****1,800.00

ONE THOUSAND EIGHT HUNDRED AND NO/100

To the order of

OFFICE OF THE ILLINOIS
STATE FIRE MARSHALL

General Account
Counter signature required if over $25,000

Authorized signature

Authorized signature

⑈00157935⑈ ⑆071923226⑆ 09 84957⑈

IL. Notification for Underground Storage Tanks

OFFICE USE ONLY
ID NUMBER
DATE RECEIVED

- A separate form must be used for each site.
- If you have more than five tanks, photocopy pages 1-5 and attach to this notification form.
- Please type, or print in ink; the signature under "certification" (section IX) must be signed in ink.

Facility I.D. # (if known) _____ Owner I.D. # (if known) _____

TYPE OF NOTIFICATION

☐ New Facility ☐ Amended (Changes/Corrections/Additional Tanks) Mark all that apply:

____ Owner Address Change (this facility only)
____ Owner Address Change (all facilities owned)
____ New Owner
____ Tank(s) Removed (Permit #_____)
____ Tanks Relined (Permit # _____)
____ Tanks Installed (Permit # _____)
____ Tanks Upgraded/Repaired (Permit #_____)
____ Abandonment Notice (Permit #_____)
____ Other _____

I. Ownership of Tank(s)

Owner Name (Corp., Individual., Public Agency or other Entity)

Mailing Address

City State Zip

County

Contact Name (Area Code) Phone

II. Location of Tank(s) (if same as Section I, Mark box) ☐

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable (exact address)

City State Zip

County

Contact Name (Area Code) Phone

III. TYPE OF OWNERSHIP (mark all that apply)

☐ Current Owner of Tanks
Date Purchased ___/___/___
☐ Former Owner
☐ Ownership Uncertain _____
☐ Other _____

IV. TYPE OF FACILITY

Type of Facility: (Circle correct code)

A. Service Station
B. Bulk Plant
C. Petroleum Distributor
D. Convenience Store
E. Auto Dealer
F. Commercial/Retail
G. Industrial/Manufacturing
H. Private Institution
I. Residence (Non-Farm)
J. Farm
K. Airport
L. Marina
M. City/Town
N. County
O. State
P. Federal (Military)
Q. Federal (Non-Military)
R. School District
S. Port District
T. Utility District
U. Fire Dept.
V. Other Special Service Districts
W. Other _____ (Please Specify)

APPENDIX B

WTS HOT WORK CERTIFICATE

WATERWAYS TRANSPORTATION SERVICES, INC.
10 S. 105 ALAGO ROAD NAPERVILLE, IL 60564
708-983-7466

MARINE CHEMIST CERTIFICATE

SERIAL NO. 062795GB

MATERIAL SERVICE CORP.	MSC	27 JUN 95
Survey Requested by	Vessel Owner or Agent	Date
3 ea. U. STORAGE TANKS	1,000 gal Metal Tanks MSC YD #19	LYONS, IL
Vessel	Type of Vessel	Specific Location of Vessel
DIESEL / GAS, ALL 3	LEL - O_2 - CO - CO_2 - VISUAL	1:00 PM
List Three (3) Cargoes	Tests Performed	Time Survey Completed

2 x 1000 GAL DIESEL U.S.T. } SAFE FOR HOT WORK

MAINTAIN FIRE WATCH DURING TANK CRUSHING.

RESULTS: LEL - 0% - O_2 - 20.8% - CO - LESS THAN 5 PPM each.

1 x 1000 gal GASOLINE U.S.T. } SAFE FOR HOT WORK

TANK WAS INERTED to 100% with CO_2 FOR REMOVAL AND HOLE CUTTING.

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or that are capable immediately stop all work and contact the undersigned Marine Chemist.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 306 Subsections 2-3.1 through 2-3.5, and Subsection 6-3.2)

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Marine Chemist's Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of fuel tanks or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the Marine Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or (b) are inerted.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under Section 2-8 of NFPA 306 and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [signature] MSC MSC 27 JUN 95 Signed [signature] Bernardo 593
Name Company Date Marine Chemist Certificate No.

'ATERWAYS TRANSPORTATION SERVICES, INC.
.0 S. 105 ALAGO ROAD NAPERVILLE, IL 60564
'08-983-7466

MARINE CHEMIST CERTIFICATE

SERIAL NO. 062795GBB

MATERIAL SERVICE CORP.	M.S.C.	27 JUN 95
Survey Requested by	Vessel Owner or Agent	Date
2,000 GAL U. STORAGE TANK	FIBREGLASS TANK	YD#18, MSC, LYONS, IL
Vessel	Type of Vessel	Specific Location of Vessel
DIESEL FUEL, ALL 3	LEL-O_2-CO-VISUAL	1:30PM
Last Three (3) Cargoes	Tests Performed	Time Survey Completed

2,000 GAL FIBERGLASS TANK } SAFE FOR WORKERS

NOTE: TANK MAY BE PULLED AND CRUSHED (WITH BACKHOE) FOR UP TO 24 HOURS FROM THE ABOVE DATE/TIME

MAINTAIN FIRE WATCH.

RESULTS OF TESTS:

LEL - 0%; O_2 - 20.8%; CARBON MONOXIDE - LESS THAN 3 PPM

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt immediately stop all work and contact the undersigned Marine Chemist.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 306 Subsections 2-3.1 through 2-3.6, and Subsection 6-3.2)

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Marine Chemist's Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of fuel tanks or tube oil tanks, or engine room or fire room bilges, have been treated in accordance with the Marine Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or (b) are inerted.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under Section 1-6 of NFPA 306 and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [signature] MSC MSC 27 JUN 95 Signed [signature] 593
Name Company Date Marine Chemist Certificate No.

APPENDIX C

WASTE MANIFEST

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761 — FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL582-0610 — IL7594 (5) — #369

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-88) Form Approved. OMB No. 2050-0039, Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NONE — Manifest Document No.: 00001
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: WHEELIN' SERVICES CORPORATION YARD 18, 4206 So. LAWNDALE AVE, LYONS, ILLINOIS 60534
4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: (708) 442-4608

A. Illinois Manifest Document Number: IL 6625
B. Illinois Generator ID Number: 0311050010
C. Illinois Transporter 1 ID Number: C0070
D. Illinois Transporter 2 ID Number:
E. Illinois Facility ID Number:
F. Illinois Facility ID Number:
G. Illinois Facility ID Number: 0312000081
H. Facility's Phone: 312 646 6442

5. Transporter 1 Company Name: MR. FRANK INC. — 6. US EPA ID Number: ILD984725049
7. Transporter 2 Company Name — 8. US EPA ID Number:
9. Designated Facility Name and Site Address: CLEAN HARBORS OF CHICAGO, 11800 So. STONY ISLAND, CHICAGO IL 60617 — 10. US EPA ID Number: ILD000608471

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	K. Handling Codes for Wastes Listed Above
a. WATER AND DIESEL FUEL NON D.O.T. REGULATED	001	TD	0050	G	X X
b.					X X
c.					X X
d.					X X

J. Additional Descriptions for Materials Listed Above: U582547 A

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons, Y = Cubic Yards

16. Special Handling Instructions and Additional Information

15. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Mark Strach — Signature: [signature] — Date (Month Day Year): 06 26 95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Scott Kostelyk — Signature: [signature] — Date (Month Day Year): 06 26 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bob Lee — Signature: [signature] — Date (Month Day Year): 06 29 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1993, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

G45849

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 6/91 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS": 708-442-4608

A. Illinois Manifest Document Number: IL 6588552 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

C. Illinois Transporter's ID: 2 2 6 0

D. (708) 595-3443 Transporter's Phone

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

5. Transporter 1 Company Name: ROSE CARTAGE — 6. US EPA ID Number:

7. Transporter 2 Company Name: — 8. US EPA ID Number:

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0.0.1	D.T	0 0 0 1 5	Y	
b.					
c.					
d.					

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DENNIS HELD — Signature: Dennis Held — Date: Month Day Year: 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Year: 8 30 95

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, section 1004 and 1009, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $50,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 6 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1 TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by sps4431 p. 32/86

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0010

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 6588551 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 9 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: Rosa Cartage — 6. US EPA ID Number:

C. Illinois Transporter's ID: 2 2 6 0

D. (25) 875 2413 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 5	Y	EPA HW Number: XX; Manifest Number: 31473
b.					EPA HW Number: XX; Manifest Number:
c.					EPA HW Number: XX; Manifest Number:
d.					EPA HW Number: XX; Manifest Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item 11: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charles T Ryan — Signature: [signature] — Date: Month Day Year: 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Year:

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1995, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

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STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-9761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62-8/81 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved, OMB No. 2050-0039, Expires 9-30-92

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service - Boya, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

A. Illinois Manifest Document Number: IL 3993843 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS*: 708-442-4608

5. Transporter 1 Company Name: R. W. Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0817

D. (312) 767-3030 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	00010	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date (Month Day Year): 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Steven Wood — Signature: [signature] — Date (Month Day Year): 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: Scott Sims — Signature: [signature] — Date (Month Day Year): 8 30 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1024 and 1027, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1, TSD MAIL TO GENERATOR

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62.3/81 IL592-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter) EPA Form 8700-22 (Rev. 6-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N/A

Manifest Document No. N/A

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534

Location if Different
Site: Same

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

A. Illinois Manifest Document Number IL 3993842 FEE PAID IF APPLICABLE

B. Illinois Generator's ID 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: ROSE CARTAGE — 6. US EPA ID Number

C. Illinois Transporter's ID 2260

D. (708) 896-2427 Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177

10. US EPA ID Number N/A

G. Illinois Facility's ID 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	0015	Y	EPA HW Number XX; Authorization Number 31473
b.					EPA HW Number XX; Authorization Number
c.					EPA HW Number XX; Authorization Number
d.					EPA HW Number XX; Authorization Number

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature — Date Month Day Year: 08 30 95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DENNIS HELD — Signature — Date Month Day Year: 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Date Month Day Year

This Agency is authorized to require pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2—Section 1004 and 1021, that the information be supplied to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by eps4431 p. 35/86

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 3/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-86) Form Approved, OMB No. 2050-0039, Expires 8-30-92

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534
Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 3993847 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 9 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: Rose Cartage
6. US EPA ID Number:

C. Illinois Transporter's ID: 2260

D. (708) 895-2423 Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177
10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	00015	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service ~~Mark Stueck~~ Gary O'Toole
Signature: Gary O'Toole
Date: Month Day Year: 083095

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dennis Held
Signature: Dennis Held
Date: Month Day Year: 083095

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [signature]
Signature: [signature]
Date: Month Day Year: 1/8/97

GENERATOR

TRANSPORTER

FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide the information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1, TSD MAIL TO GENERATOR

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STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 52 5/91 IL532-0610

EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534

Location if Different: Sites Same

A. Illinois Manifest Document Number: IL 3993844 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* 708-442-4608

5. Transporter 1 Company Name: Rose Cartage
6. US EPA ID Number

C. Illinois Transporter's ID: 2 2 1 6 0

D. (708) 875 2423 Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177

10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 30 [redacted]	Y	EPA HW Number: X X; Authorization Number: 3 1 4 7 3 1
b.					EPA HW Number: X X; Authorization Number:
c.					EPA HW Number: X X; Authorization Number:
d.					EPA HW Number: X X; Authorization Number:

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information
1st 15yds
2nd 15yds

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack
Signature:
Date: Month Day Year 0 8 3 0 9 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charles T Ryan
Signature:
Date: Month Day Year 0 8 3 0 9 5

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: [redacted]
Signature:
Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111½, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed: 08/20/2007 4:11:11 PM by Sparkman

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 52.5/61 L582-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534

Location if Different: Site: Same

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

A. Illinois Manifest Document Number: IL 3993848 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 8 0 1 7 1 5 0 2 0

5. Transporter 1 Company Name: R.W. Collins Co. — 6. US EPA ID Number

C. Illinois Transporter's ID: 0 8 1 7

D. Transporter's Phone: (708 458 6888

7. Transporter 2 Company Name — 8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 8 4 8 6 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 5	Y	EPA HW Number: XX; Authorization Number: 3 1 1 4 7 3
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary O'Toole, Material Service, ~~Mark Illinois~~ — Signature: Gary O'Toole — Date (Month Day Year): 083095

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: [illegible] — Signature: [illegible] — Date (Month Day Year):

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name — Signature — Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Printed/Typed Name: [illegible] — Signature: [illegible] — Date (Month Day Year): 83095

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Fabrication of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed: 08/30/2007 4:41PM by-page 4431 - 30/86

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 — SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 4/91 — IL532-0610

EPA Form 8700-22 (Rev. 9-88) — Form Approved, OMB No. 2050-0039, Expires 9-30-92

PLEASE TYPE — (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

A. Illinois Manifest Document Number: IL 3993849 — FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: R.W. Collins — 6. US EPA ID Number

C. Illinois Transporter's ID: [illegible]

D. (708) 458-[illegible] Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 5	Y	EPA HW Number: XX; Authorization Number: 3 1 4 7 3
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gary O'Toole, Material Service/~~Mark Strack~~ — Signature: Gary O'Toole — Date: Month Day Year 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: George Janusek — Signature: [illegible] — Date: Month Day Year 8 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible] — Signature: [illegible] — Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Publication of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved for the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by epa6421 p. 20/06

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0009, Expires 9-30-93

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 3993845 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: Rose Cartage — 6. US EPA ID Number:

C. Illinois Transporter's ID: 3260

D. ( ) Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste - Bags	001	DT	00 30	Y	EPA HW Number: XX; Authorization Number: 31473
b. Non-Hazardous Special Waste	001	DT	00	Y	EPA HW Number: XX; Authorization Number: 31473
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information: 15 yd Dr; 2 and 15

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: [signature] — Signature: Scott Hopewell [signature] — Date: Month Day Year: 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. — Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Year: 8 30 95

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1985, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by epa4431 p 40/86

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 52 8/91 IL532-0610

EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534

Location If Different: Site: Same

A. Illinois Manifest Document Number: IL 3993850 FEE PAID IF APPLICABLE

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* 708-442-4608

B. Illinois Generator's ID: D 0 1 1 7 1 5 0 1 2 0

5. Transporter 1 Company Name: Dilks Carting 7 — 6. US EPA ID Number

C. Illinois Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number

E. Illinois Transporter's ID

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: D 8 9 4 8 0 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	0015	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature — Date: Month Day Year 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tete Mathews — Signature — Date: Month Day Year 08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature — Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 for each day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675

COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 9/91 IL532-0510

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS": 708-442-4608

A. Illinois Manifest Document Number: IL 3993851 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0311715020

5. Transporter 1 Company Name: R. W. Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0817

D. (312) 767-3050 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0884830005

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	00015	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date (Month Day Year): 08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: WILLIE McKITHEN — Signature: [signature] — Date (Month Day Year): 8 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Printed/Typed Name: [signature] — Signature: [signature] — Date (Month Day Year): 8 30 95

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 Sub 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

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COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by epa4431 p. 42/86

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-92

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location If Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 3993846 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0311715020

5. Transporter 1 Company Name: R. W. Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 08117

D. (312) 767-3[illegible] Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0894830005

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	0002[illegible]	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473 — 1st Load 10 yards 8; 2nd Load 10 yards

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/~~Mark Sweck~~ Gary O'Toole — Signature: Gary O'Toole — Date (Month Day Year): 083095

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Steven Wood — Signature: Steve Wood — Date (Month Day Year): 083095

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. — Printed/Typed Name: [illegible] — Signature: [illegible] — Date (Month Day Year): 08 30 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

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COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 52 6/81 IL532-0610

EPA Form 8700-22 (Rev. 6-89)

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

Form Approved. OMB No. 2050-0039, Expires 9-30-94

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS": 708-442-4608

A. Illinois Manifest Document Number: IL 6588550 — FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: R. W. Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0 8 1 1

D. (312) 747-3030 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 6 8 3 0 0 0 6

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	0 7	0 0 0 1 0	Y	EPA HW Number: XX; Additional Number: 31473
b.					EPA HW Number: XX; Additional Number:
c.					EPA HW Number: XX; Additional Number:
d.					EPA HW Number: XX; Additional Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information: 1 Load 10 Yds

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date (Month Day Year)
Material Service/Mark Strack	[signature]	08 30 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
GENE PERCZYNSKI	[signature]	08 30 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
[signature]	[signature]	[illegible]

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1001 and 1002, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $50,000 per day of violation; falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

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STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

Data Form LPC 52 8/91 IL432-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 4-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534

Location if Different
Site: Same

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBER: 708-442-4608

A. Illinois Manifest Document Number: IL 6588564 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: TFH
6. US EPA ID Number:

C. Illinois Transporter's ID: 3012
D. Transporter's Phone: 815 436 9900

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. Illinois Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177

10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5
H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 4 20	Y	X X
b.					X X
c.					X X
d.					X X

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information
1ST LOAD 10 YDS
2ND LOAD 10 YDS

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Printed/Typed Name: Material Service/Mark Strack
Signature: Michael McFarlane for Mark Strack for MSC
Date: Month Day Year 08 15 17 15

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TOM HURLEY
Signature:
Date: Month Day Year 8 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Stevens
Signature:
Date: Month Day Year 8 31 95

GENERATOR — TRANSPORTER — FACILITY

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COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/84 IL 532-0510

EPA Form 8700-22 (Rev. 9-89)

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

Form Approved. OMB No. 2050-0039, Expires 8-30-94

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS": 708-442-4608

A. Illinois Manifest Document Number: IL 6588556 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: RW Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0817

D. (312) 767-3020 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	001	DT	00015	Y	EPA HW Number: XX; Additional Number: [illegible]
b.					EPA HW Number: XX; Additional Number:
c.					EPA HW Number: XX; Additional Number:
d.					EPA HW Number: XX; Additional Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: David Reece — Signature: [signature] — Date: Month Day Year: 08 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: — Signature: [signature] — Date: Month Day Year: 8 31 95

GENERATOR — TRANSPORTER — FACILITY

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COPY 1. TSD MAIL TO GENERATOR

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STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 8-30-84

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534

Location If Different
Site: Same

A. Illinois Manifest Document Number: IL 6588555 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

5. Transporter 1 Company Name: Bills Cartage 7
6. US EPA ID Number:

C. Illinois Transporter's ID: [illegible]

D. [illegible] Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177

10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 5	Y	XX 3 0 4 7 1 3
b.					XX
c.					XX
d.					XX

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

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GENERATOR

Printed/Typed Name: Material Service/Mark Strack
Signature:
Date: Month Day Year 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

TRANSPORTER

Printed/Typed Name: Pete Markusk
Signature:
Date: Month Day Year 08 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name:
Signature:
Date: Month Day Year 8 31 95

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COPY 1. TSD MAIL TO GENERATOR

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STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19279 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 0/01 IL588-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved, OMB No. 2050-0039, Expires 5-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

A. Illinois Manifest Document Number: IL 6588561 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

5. Transporter 1 Company Name: BILL'S CARTAGE — 6. US EPA ID Number:

C. Illinois Transporter's ID: 1 2 5 6 0

D. Transporter's Phone: 708 579 6[illegible]

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. Transporter's Phone: ( )

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 30	Y	EPA HW Number XXXXXX; State XXXXXX
b.					EPA HW Number XXXXXX; State XXXXXX
c.					EPA HW Number XXXXXX; State XXXXXX
d.					EPA HW Number XXXXXX; State XXXXXX

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item 11: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information: LOAD - 1 - 15425 8; U - 2 - 15400

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year 05 13 1 15

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PETE MARKUSIC — Signature: [signature] — Date: Month Day Year 05 13 1 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: S Watts — Signature: [signature] — Date: Month Day Year 05 15 95

GENERATOR — TRANSPORTER — FACILITY

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1021 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 52 9/81 IL 532-0610

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location If Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 6588566 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: [illegible]

C. Illinois Transporter's ID: 0817

D. Transporter's Phone: 3[illegible]757.20.3

E. Illinois Transporter's ID:

F. Transporter's Phone:

G. Illinois Facility's ID: 0 8 0 4 6 3 0 0 0 6

H. Facility's Phone: (708) 741-0219

5. Transporter 1 Company Name: RW COLLINS — 6. US EPA ID Number:

7. Transporter 2 Company Name: — 8. US EPA ID Number:

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a. Non-Hazardous Special Waste	0 0 1	0 1	0 0 0 1 0	Y	XX
b.					XX
c.					XX
d.					XX

J. Additional Description for Materials Listed Above: 1ST LOAD - 10 YDS Y

Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: RW COLLINS Joel Feith — Signature: [signature] — Date: Month Day Year: 8 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: — Signature: [signature] — Date: Month Day Year: 8 31 95

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1041, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed: 08/20/2007 4:11pm by epaa431 p.4/68

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 6/91 IL532-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location If Different: Site: Same

A. Illinois Manifest Document Number: IL 6588559 — FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0311715020

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

5. Transporter 1 Company Name: Rose Cartage — 6. US EPA ID Number

C. Illinois Transporter's ID: 2216K

D. Transporter's Phone: (708) 895-2023

7. Transporter 2 Company Name — 8. US EPA ID Number

E. Illinois Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0894800005

H. Facility's Phone: (708) 741-0219

GENERATOR

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	001	DT	00 30	Y	EPA HW Number: XX; Additional Number: 31473
b.					EPA HW Number: XX; Additional Number
c.					EPA HW Number: XX; Additional Number
d.					EPA HW Number: XX; Additional Number

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473 Lot 15 yds 2nd 15 yds

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons, Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year 09 31 95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charles T Ryan — Signature: [signature] — Date: Month Day Year 09 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1992, Chapter 111½, Sections 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41:17 by epa1131 p. 38/66

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL528-0610

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-84) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location If Different: Site: Same

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS*: 708-442-4608

A. Illinois Manifest Document Number: IL 6588565 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0311715020

C. Illinois Transporter's ID: 0817

D. (717) 767-7030 Transporter's Phone

E. Illinois Transporter's ID.

F. ( ) Transporter's Phone

G. Illinois Facility's ID: 0894830005

H. Facility's Phone: (708) 741-0219

6. Transporter 1 Company Name: R W Collins — 8. US EPA ID Number:

7. Transporter 2 Company Name — 8. US EPA ID Number:

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	001	DT	0001	Y	EPA HW Number: XX; Authorization Number: [illegible]
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: 1st Load 10 yards — Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] For Mark Strack For MSC — Date: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Steven Wood — Signature: [signature] — Date: 08 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: S Williams — Signature: [signature] — Date: 8 31 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1988, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

COPY 1. TSD MAIL TO GENERATOR

printed 08/20/2007 4:41PM by spa1ss p. 31/88

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0810

EPA Form 8700-22 (Rev. 9-88)

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039, Expires 8-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS": 708-442-4608

A. Illinois Manifest Document Number: IL 6588558 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 8 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: R W COLLINS — 6. US EPA ID Number:

C. Illinois Transporter's ID: 9 8 0 7

D. [illegible] Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 0	Y	EPA HW Number: XX; Authorization Number: [illegible]
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: R W COLLINS Joel Fetz — Signature: [signature] — Date: Month Day Year: 8 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Year: 8 31 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

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COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 62 8/81 IL532-0810

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534

Location if Different
Site: Same

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

A. Illinois Manifest Document Number: IL 6588557 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 9 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: K W Collins
6. US EPA ID Number:
C. Illinois Transporter's ID: 0 8 1 6 2
D. (312) 767 3010 Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. Illinois Transporter's ID:
F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177
10. US EPA ID Number: N/A
G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5
H. Facility's Phone: (708) 741-0219

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	K. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 0	Y	XXXXXX 311 9 A 3
b.					XXXXXX
c.					XXXXXX
d.					XXXXXX

J. Additional Description for Materials Listed Above
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14
G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack
Signature: [signature]
Date: Month Day Year 0 8 3 1 9 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Steven Wood
Signature: [signature]
Date: Month Day Year 0 8 3 1 9 5

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Sullins
Signature: [signature]
Date: Month Day Year 8 3 1 9 5

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1989, Chapter 111 1/2, Section 1004 and 1005, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS — ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 92 8/91 (L552-0610)

PLEASE TYPE (form designed for use on elite (12-pitch) typewriter) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039; Expires 8-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A
Manifest Document No.: N/A
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
Material Service
4226 Lawndale
Lyons, IL 60534
Location if Different: Site: Same

A. Illinois Manifest Document Number: IL 6588553 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 708-442-4608

5. Transporter 1 Company Name: R.W. Collins
6. US EPA ID Number:

C. Illinois Transporter's ID: 0811
D. 312 626 2[illegible] Transporter's Phone

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. Illinois Transporter's ID:
F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address
Woodland Landfill
7 N 500 Rt 25 - PO Box 364
South Elgin, IL 60177
10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 1 5	Y	
b.					
c.					
d.					

J. Additional Description for Materials Listed Above: 15-XDS
Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item 14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date (Month Day Year): 08/01/95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: WILLIE McSTHEN — Signature: [signature] — Date (Month Day Year): 8/1/95

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: — Signature: [signature] — Date (Month Day Year): 8/2/95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of the information may result in a fine up to $50,000 per day of violation and imprisonment for up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675.

COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

Blate Form LPC 52 5/81 IL552-0510

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2950-0039, Expires 8-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 6588554 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: RW Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0817

D. 317 767 3030 Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 15	Y	EPA Hazard Number: XX; Authorization Number: 3 1 4 7 3
b.					EPA Hazard Number: XX; Authorization Number:
c.					EPA Hazard Number: XX; Authorization Number:
d.					EPA Hazard Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: George Janucka — Signature: [signature] — Date: Month Day Year: 8 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name — Signature: [signature] — Date: Month Day Year: 8 31 95

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1985, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

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COPY 1. TSD MAIL TO GENERATOR

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

State Form LPC 52 8/81 IL532-0810

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-88) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS" 708-442-4608

A. Illinois Manifest Document Number: IL 6588563 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0 3 1 1 7 1 5 0 2 0

5. Transporter 1 Company Name: ROSE CARTAGE — 6. US EPA ID Number:

C. Illinois Transporter's ID: [illegible]

D. (702) 845-2423 Transporter's Phone

7. Transporter 2 Company Name — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. ( ) Transporter's Phone

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0 8 9 4 8 3 0 0 0 5

H. Facility's Phone: (708) 741-0219

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non-Hazardous Special Waste	0 0 1	D T	0 0 0 3 0	Y	EPA HW Number: XX; Authorization Number: 31473
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information:
1st LOAD 15 YDS
2nd LOAD 15 YDS

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Material Service/Mark Strack — Signature: [signature] — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: J. SLAGER — Signature: [signature] — Date: Month Day Year: 08 31 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [signature] — Signature: [signature] — Date: Month Day Year: 8 31 95

GENERATOR — TRANSPORTER — FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statutes, 1988, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675

COPY 1, TSD MAIL TO GENERATOR

STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL530-0510

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 9-89) Form Approved. OMB No. 2050-0039, Expires 9-30-94

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST

1. Generator's US EPA ID No.: N/A — Manifest Document No.: N/A

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: Material Service, 4226 Lawndale, Lyons, IL 60534 — Location if Different: Site: Same

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* 708-442-4608

A. Illinois Manifest Document Number: IL 6588562 FEE PAID IF APPLICABLE

B. Illinois Generator's ID: 0311715020

5. Transporter 1 Company Name: R W Collins — 6. US EPA ID Number:

C. Illinois Transporter's ID: 0517 — 0311 R673000 Transporter's Phone

7. Transporter 2 Company Name: — 8. US EPA ID Number:

E. Illinois Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Woodland Landfill, 7 N 500 Rt 25 - PO Box 364, South Elgin, IL 60177 — 10. US EPA ID Number: N/A

G. Illinois Facility's ID: 0894800005

H. Facility's Phone: (708) 741-0219

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Non-Hazardous Special Waste	001	DT	0001 30	Y	EPA HW Number: XX; Authorization Number: 3 [illegible]
b.					EPA HW Number: XX; Authorization Number:
c.					EPA HW Number: XX; Authorization Number:
d.					EPA HW Number: XX; Authorization Number:

J. Additional Description for Materials Listed Above: Profile Sheet WLF # 31473

K. Handling Codes for Wastes Listed Above in Item #14: G = Gallons Y = Cubic Yards

15. Special Handling Instructions and Additional Information: 1ST LOAD 15yds 2ND LOAD 15yds 30yds Total

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Material Service/Mark Strack — Signature: Michael McBee for MHS for MSC — Date: Month Day Year: 08 31 95

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: George Jaucsky — Signature: [signature] — Date: Month Day Year: 8 3 95

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Printed/Typed Name: Seaton — Signature: [signature] — Date: Month Day Year: 8 31 95

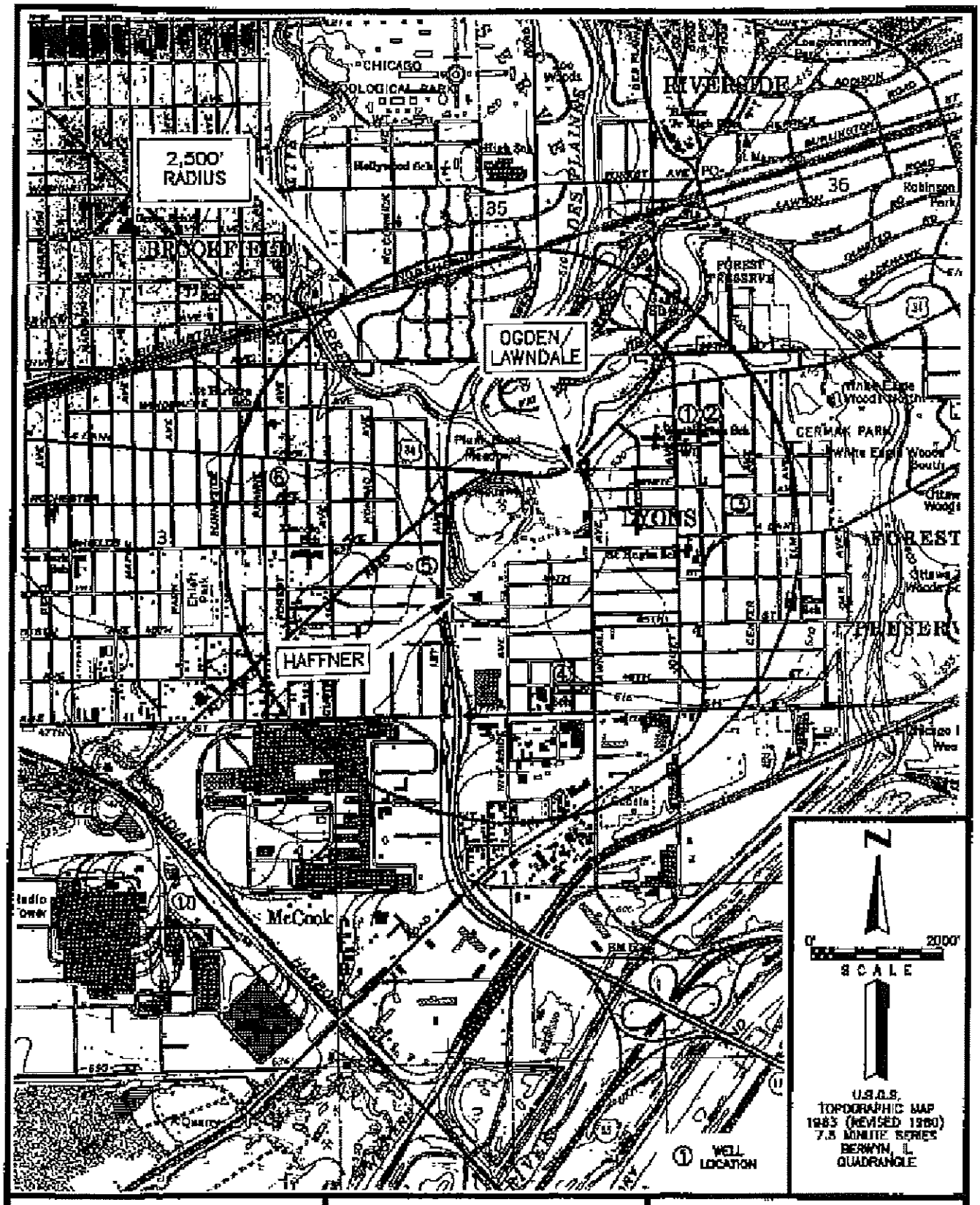
This Agency is authorized to require, pursuant to Illinois Revised Statute, 1985, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 1. TSD MAIL TO GENERATOR

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-8802 or 202 / 426-2675.

APPENDIX D

ISWS DATABASE INFORMATION AND WELL LOCATION MAP



ENDAL	MATERIAL SERVICE CORPORATION YARD #18 LYONS, IL	FIGURE 1 WELL LOCATION MAP

Illinois State Water Survey PICS Database Page 1
Wednesday Mar 23 1994 11:10:20

County: Cook

Township Code: 38N
Range Code: 12E
Section Codes: 1, 2, 3, 10, 11, 12, 34, 35, 36

5 records were found for the specified locations.

Questions : Contact the Illinois State Water Survey's
Ground Water Division @ (217)333-7223
Publication: Please cite the Illinois State Water Survey's
PICS (Public-Industrial-Commercial) Database
in all publications based wholly or partially
on this information.

Please Note:

The data in the PICS Database is a listing of municipal and large industrial and commercial wells which are known to the Illinois State Water Survey (ISWS). The information was initially entered from public water supply data and supplemented with the Illinois Water Inventory Project data. This database is updated as additional information is received and verified.

printed 08/20/2007 1:11PM by epa151 p. 65/68

Cook County - PICS Database - Page 2 Wednesday Mar 23 1999 11:10:20

D	Name	No.	Status	Location	Depth	Type log	Year constructed	Driller
60	MWRDGC-STICKNEY SWGE TRTMT WKS	101	A	031 38N12E12SC	1193	D	1973	J P MILLER ART WELL
60	ST REBIS PAPER COMPANY	2	A	031 38N12E365M	322	D	1959	LAYNE-WESTERN CO
10	MATERIAL SERVICE CO - YARD 19	1	A	031 38N12E107S	186		1890	
1 10	LYONS	1	S	031 38N12E018B	1650	-	1913	W H BRAY & CO
2 10	LYONS	2	S	031 38N12E018G	2020	S	1929	WILLIAM H CATER

County: Cook

Township Code: 39N
Range Code: 12E
Section Codes: 1, 2, 3, 10, 11, 12, 34, 35, 36

99 records were found for the specified locations.

Questions : Contact the Illinois State Water Survey's Ground Water Division @ (217)333-9043

Publication: Please cite the Illinois State Water Survey's Private-Well Database in all publications based wholly or partially on this information.

Please Note:

The data in the Private Well Inventory Database is a listing of those non-municipal wells which are known to the Illinois State Water Survey (ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those who submitted the form. Information in the private well database has not been verified.

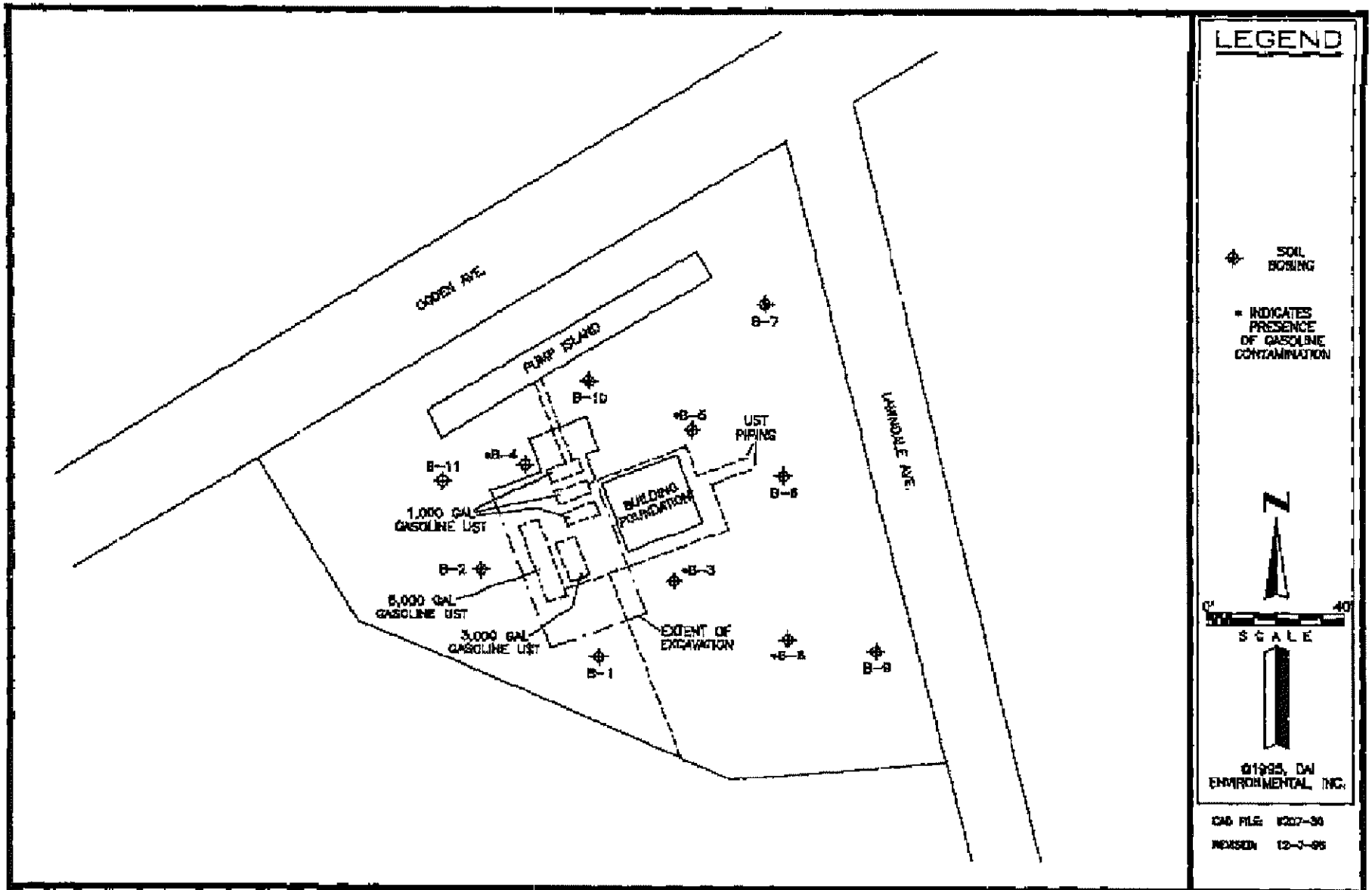
printed 08/20/2007 4:41PM by epa4431 p. 61/66

OFFICE USE ONLY	TWN	RNG	SC	PL	OWNER	DRILLER	DATE	PERMIT	DPTH	RE
26759	38N	12E	01		L H WARREN & SON		00/00/0000		50	D
26760	38N	12E	01		L H WARREN & SON		00/00/0000		100	D
89589	38N	12E	01		SAN DIST CHI #46		00/00/1901		31	DG
89590	38N	12E	01		SANT DIST CHI #47		00/00/1901		31	DG
89591	38N	12E	01		SAN DIST CHI #54		00/00/1901		32	DG
89592	38N	12E	01		SANITARY DIS OF CHICAGO #2		00/00/1901		21	DG
89594	38N	12E	01		SANT DIST OF CHICAGO #8		00/00/1901		29	DG
189598	38N	12E	01		KNOBELE BENDER STONE & ASSOC		12/00/1975		387	RG
26761	38N	12E	01	1D		BUTZLER	00/00/0000		176	D
27357	38N	12E	01	1E	MCBRIDE WOODS	BUTZLER	00/00/0000		66	D
29119	38N	12E	01	1E	COOK CO FOREST PRESERVE (OTTAW		00/00/0000		65	CI
33558	38N	12E	01	1E	COOK CO FOREST PRESERVE (OTTAW		00/00/0000		65	CI
27358	38N	12E	01	2D	MCBRIDE WOODS	BUTZLER	00/00/0000		80	D
29120	38N	12E	01	2D	COOK CO FOREST PRESERVE (OTTAW		00/00/1922		80	I
33559	38N	12E	01	2D	COOK CO FOREST PRESERVE (OTTAW		00/00/1922		80	I
29121	38N	12E	01	2E	COOK CO FOREST PRESERVE (OTTAW		00/00/0000		178	CI
33557	38N	12E	01	2E	COOK CO FOREST PRESERVE (OTTAW		00/00/0000		178	CI
27359	38N	12E	01	5G	CERNAK PARK	BUTZLER	00/00/0000		200	D
23787	3 38N	12E	01	7E	HAVEMANN'S GREENHOUSE		00/00/1956		2000	D P
235181	38N	12E	02		AMOCO OIL	ECC	02/16/1993	MONITORING WELL	7	RG
235182 ?	38N	12E	02		AMOCO OIL	ECC	02/16/1993	MONITORING WELL	10	RG
189626	38N	12E	02		KNOBELER BENDER STONE & ASSOC		02/27/1976		371	RG
29666	4 38N	12E	02	3A	LYONS (MSD #MW-3)	WEHLING	12/30/1974	M033614	210	RGX
27366	5 38N	12E	02	6D	WERNER MFG CO	J P MILLER	09/11/1957		385	DGC
189633	38N	12E	03		CHICAGO SANITARY DISTRICT		03/05/1968		393	RG
189630	38N	12E	03		DIST HWY OFFICE #20		04/29/1967		24	RG
23789	6 38N	12E	03	2F	CULLIGAN SOFT WATER SERVICE	J P MILLER	08/00/1961		340	RGC
23790	38N	12E	03	3A	WILLOW FARM PRODUCTS		00/00/1944		250	C
23791	38N	12E	03	3A	WILLOW FARM PRODUCTS		00/00/1944		365	C
27367	38N	12E	03	4A	WILLOW FARM DAIRY	J P MILLER	04/00/1957		365	DC
189805	38N	12E	10		ELECTRIC MOTIVE CORP #1	MILLER	00/00/1935		1590	RG
213716	38N	12E	10		METROPOLITAN SANITARY DIST		02/00/1975		430	C
213715	38N	12E	10	4H	MATERIAL SERVICE CORP	WEHLING	11/21/1976	033815	206	RG
27368	38N	12E	10	5D	ELECTRO-MOTIVE CORP #1	J P MILLER	00/00/1935		1605	C
213717	38N	12E	10	7A	METROPOLITAN SANITARY DIST	WEHLING	07/31/1974	031274	430	RG
23798	38N	12E	10	8C	ELECTRO MOTIVE		00/00/0000		1980	C
23797	38N	12E	10	8C	ELECTRO MOTIVE CORP.#3		00/00/1943		600	DC
27370	38N	12E	10	8C	ELECTRO-MOTIVE CORP #2	J P MILLER	02/00/1938		1989	RGC
27366	38N	12E	10	8D	FEDERAL AVIATION ADMINISTRATID		00/00/0000		200	A
189807	38N	12E	11		DES PLAINES RIV SYSTEM	K B S AND ASSOC	04/23/1976		377	RG
189806	38N	12E	11		FA 133# BRIDGE BORING #B-1	ILL DIV OF HWYS	09/22/1966		41	RB
27372	38N	12E	11	4E	UNIVERSAL OIL CO	J P MILLER	00/00/1941		1554	RGI
213730	38N	12E	11	5B	METROPOLITAN SANITARY DIST	WEHLING	08/09/1974	031436	390	RG
27373	38N	12E	11	6C	LEWIS TAR PRODUCTS CO	J P MILLER	01/31/1944		1167	DC
	[illegible]	[illegible]	11	7C	LEWIS TAR PRODUCTS CO	J P MILLER	00/00/1943		1172	RG

APPENDIX E

FIGURES 2a, 2b, 3, 4

printed 08/20/2007 4:41PM by epa4431 p. 64/86

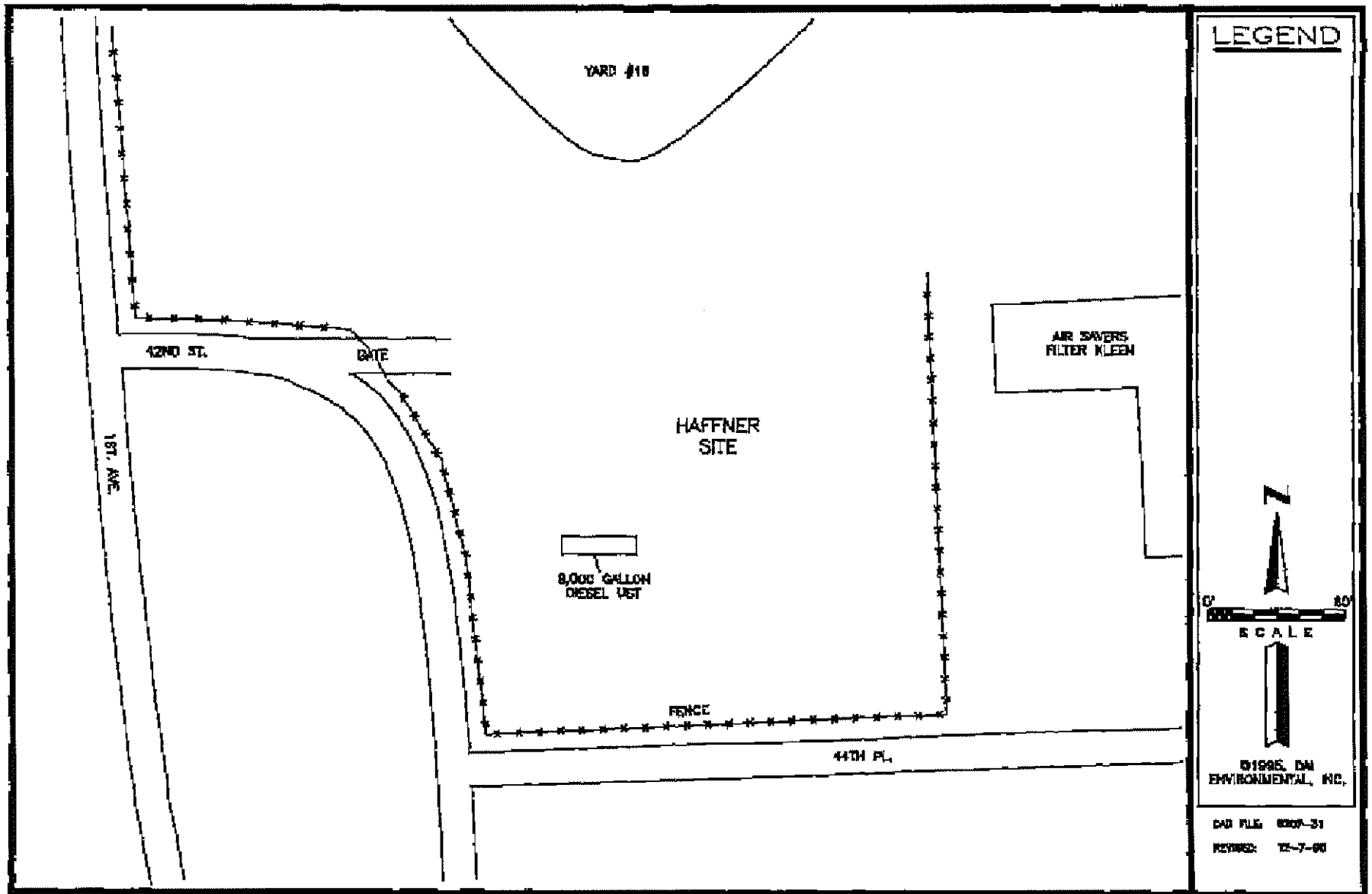


DAI ENVIRONMENTAL

MATERIAL SERVICE CORPORATION
OGDEN/LAWNDALE SITE
LYONS, IL

FIGURE 2A
UNDERGROUND STORAGE
TANK MAP

printed 08/20/2007 4:41PM by cpd431 p. 65/96

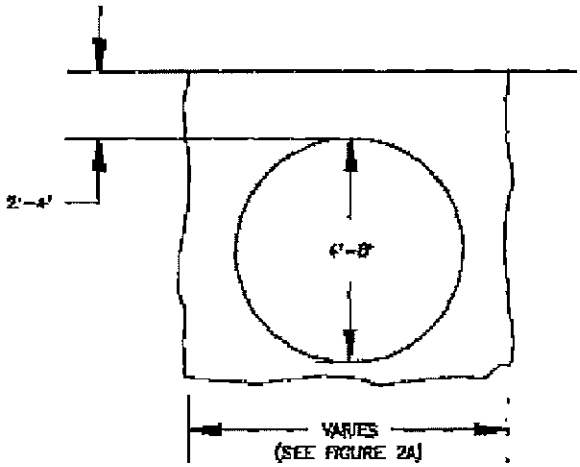


DAI ENVIRONMENTAL

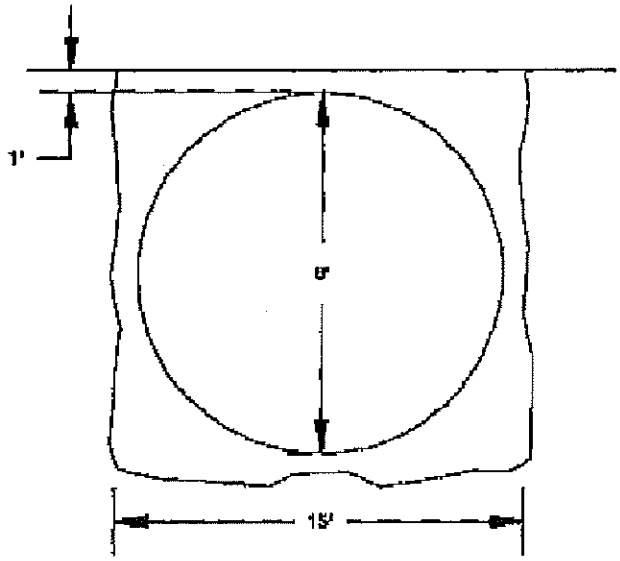
MATERIAL SERVICE CORPORATION
HAFFNER SITE
LYONS, IL

FIGURE 2B
UNDERGROUND STORAGE
TANK MAP

OGDEN/LAWNDALE SITE
(MULTIPLE TANKS)



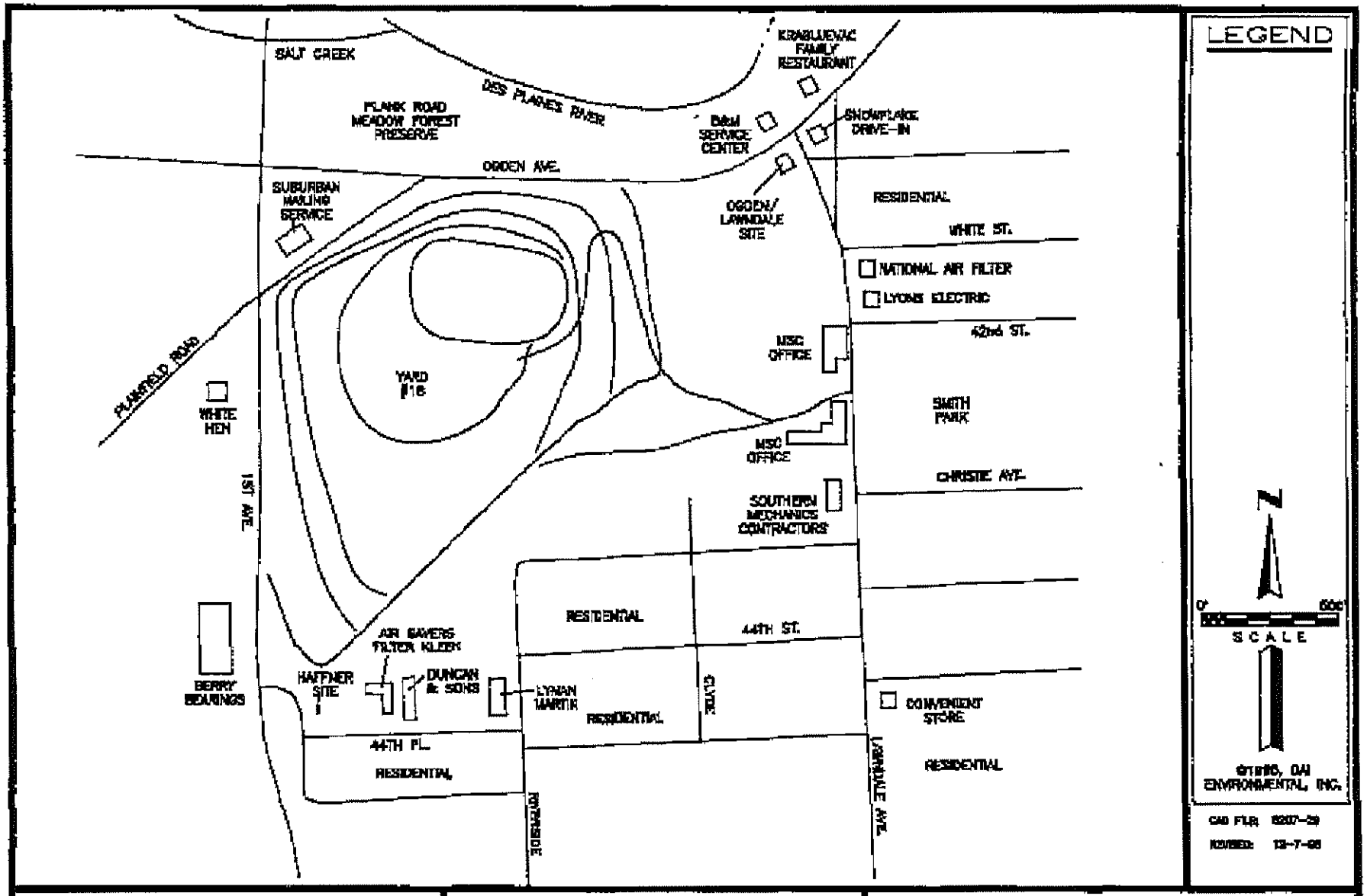
HAFFNER SITE



0207-32

ENDAL	MATERIAL SERVICE CORPORATION YARD #18 LYONS, IL	FIGURE 3 TANK CROSS SECTIONS AND EXCAVATIONS

printed 08/20/2007 4:41PM by ggs4431 p. 67/86



ENDAL

MATERIAL SERVICE CORPORATION
YARD #18
LYONS, IL

FIGURE 4
AREA MAP

APPENDIX F

PHASE II SUBSURFACE INVESTIGATION

Attached to this memorandum is a site plan showing soil boring locations, laboratory analytical results, and the IEPA's generic cleanup objectives for gasoline and diesel fuel leaking underground storage tank sites. The site map indicates which borings were above the cleanup objectives for BETX (which the IEPA utilizes for leaking gasoline USTs) and for PNAs (which the IEPA additionally utilizes for leaking diesel USTs).

SITE PLAN - OGDEN & LAWNDALE UST's

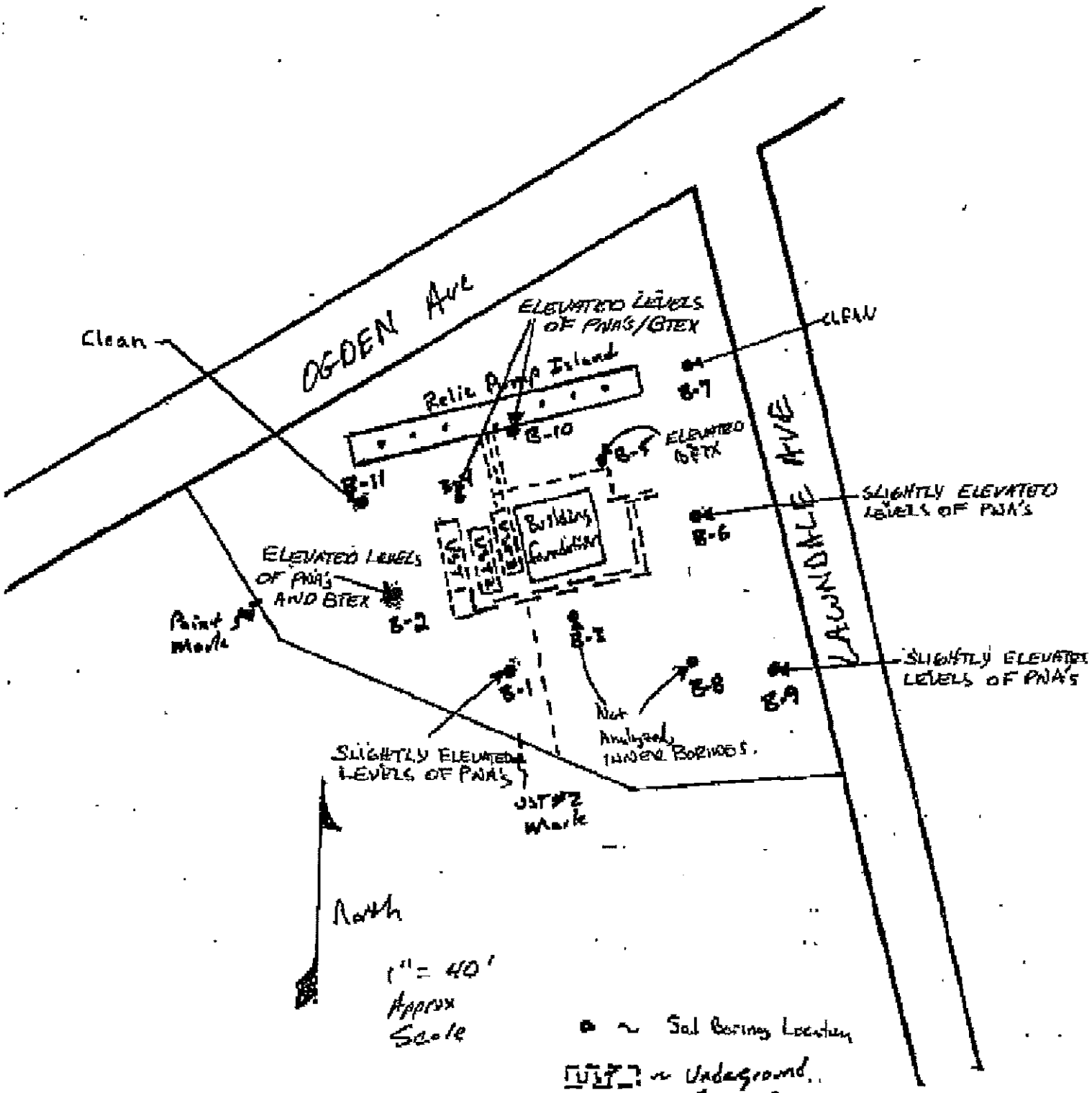


TABLE 2

Generic Cleanup Objectives and Acceptable Detection Limits

	Soil Cleanup Objectives (mg/kg)	Groundwater Cleanup Objectives (mg/l)	ADLs Soil (mg/kg)	ADLs Groundwater (mg/l)
Benzene	0.005	0.005	0.002	0.002
Ethylbenzene			0.002	0.002
Toluene			0.002	0.002
Xylene (Total)			0.005	0.005
Total BETX*	11.705	11.705		
Lead**			0.005	0.100
Naphthalene	0.025	0.025	0.660	0.010
Acenaphthene	8.4	0.42	1.200	0.018
Anthracene	42.0	2.1	0.660	0.0066
Fluoranthene	5.6	0.28	0.660	0.0021
Fluorene	5.6	0.28	0.140	0.0021
Pyrene	4.2	0.21	0.160	0.0027
TOTAL CARCINOGENIC PNAs	0.004	0.0002		
Benzo(a)anthracene			0.0067	0.00013
Benzo(a)pyrene			0.015	0.00023
Benzo(b)fluoranthene			0.011	0.00018
Benzo(k)fluoranthene			0.011	0.00017
Chrysene			0.100	0.0015
Dibenzo(a,h)anthracene			0.020	0.0003
Indeno (1,2,3-c,d)pyrene			0.029	0.00043
TOTAL NON-CARCINOGENIC PNAs	4.2	0.21		
Acenaphthylene			0.660	0.010
Benzo(g,h,i)perylene			0.051	0.00076
Phenanthrene			0.660	0.0064

* *Total BETX is the sum of the Benzene, Ethylbenzene, Toluene, and Xylene concentrations.*

** *For cleanups involving leaded products. Concentration in TCLP extract in soil. Cleanup objectives will be determined case-by-case.*

Generic cleanup objectives apply across the board at sites with releases of light, middle and heavy end petroleum products. Any other cleanup objectives are determined on a site-specific basis.

It should be anticipated that ADLs will change as improvements are made in analytical technology and commonly available analytical capability.

If an owner/operator is unable to meet the generic cleanup objectives or the ADLs, a demonstration may be made to the Agency to request site-specific levels.

Reported: March 21, 1995
LEVEL I REPORT
Page Number: 1

SUBURBAN LABORATORIES, Inc.
"Analytical Testing"
4140 Lin Drive • Hillside, Illinois 60162-1183

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ENVIRONMENTAL SERVICES

FINAL REPORT OF LABORATORY ANALYSIS

Material Service Corporation
4226 Lawndale Avenue
Lyons, IL 60534

Attention: Gary O'Toole

SLI Order No.: 5503301
Project ID.: MSC OGDEN & LAWNDALE
P.O. #: 930187
Samples Received: 03/14/95
Collected By: CLIENT

Sample ID: B-1
Sample Type: SOIL

Date Collected: 03/14/95 08:50:00
SLI ID: 5503301-01A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	30.2	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	74.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	15.6	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	37.5	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	274	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	4.47	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	2.18	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	5.16	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	3.20	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	94			03/16/95	FR	

Reported: March 22, 1995
LEVEL I REPORT
Page Number: 2

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
6140 Lin Drive • Hillside, Illinois 60162-1188

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-2
Sample Type: SOIL

Date Collected: 03/14/95 09:20:00
SLI ID: S503301-02A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	88	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	1130	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	2840	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	38.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	544	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	1200	ug/kg	200	03/17/95	FR	
Toluene 108-88-3	336	ug/kg	200	03/17/95	FR	
Ethyl-benzene 100-41-4	1650	ug/kg	200	03/17/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	2880	ug/kg	200	03/17/95	FR	
o-Xylene 95-47-6	1240	ug/kg	200	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	84			03/17/95	FR	

Illinois Department of Public Health #17585; Illinois Environmental Protection Agency #100223
Member of International Association of Environmental Testing Laboratories

LEVEL I REPORT
Page Number: 3

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Lid Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: 8503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-4
Sample Type: SOIL

Date Collected: 03/14/95 10:20:00
SLI ID: 8503301-03A

PARAMETER	RESULT	UNITS DATE	LIMIT	DATE ANALYZED	BY AS	METHOD
EXTRACTION (PNA)	03/17/95					EPA 3550
Solids-Total	92	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	980	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	2480	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	62.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	37.0	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.6	ug/kgDW	28.6	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	1540	ug/kg	100	03/17/95	FR	
Toluene 108-88-3	5370	ug/kg	100	03/17/95	FR	
Ethyl-benzene 100-41-4	3920	ug/kg	100	03/17/95	FR	
** m-Xylene / p-Xylene (108383 / 106423)	13800	ug/kg	100	03/17/95	FR	
o-Xylene 95-47-6	4570	ug/kg	100	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	113			03/17/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Uhl Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: 8503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: S-5E
Sample Type: SOIL

Date Collected: 03/24/95 10:50:00
SLI ID: 8503301-04A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	2200	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	144	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<200 UJ	ug/kg	200	03/17/95	FR	
Toluene 108-88-3	<200 UJ	ug/kg	200	03/17/95	FR	
Ethyl-benzene 100-41-4	15100 J	ug/kg	200	03/17/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	27000 J	ug/kg	200	03/17/95	FR	
o-Xylene 95-47-6	10600 J	ug/kg	200	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	243 Q			03/17/95	FR	

SUBURBAN LABORATORIES, Inc.
"Analytical Testing"
4140 Lin Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAMENDALE

Sample ID: E-6
Sample Type: SOIL

Date Collected: 03/14/95 11:25:00
SLI ID: S503301-05A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	86	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	25.0	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	94.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	52.7	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.5	ug/kgDW	50.5	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	95.5	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	32.6	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	3.21	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	94			03/16/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lix Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-7
Sample Type: SOIL

Date Collected: 03/16/95 11:55:00
SLI ID: S503301-06A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	80	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/20/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/20/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/20/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/20/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/20/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/20/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/20/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/20/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/20/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/20/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/20/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/20/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/20/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/20/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/20/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/20/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	PR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	PR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	PR	
** m-Xylene / p-Xylene 108383 / 106423	<3.00	ug/kg	3.00	03/16/95	PR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	PR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	93			03/16/95	PR	

Reported: March 23, 1995
LEVEL I REPORT
Page Number: 7

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lat Drive * Hillside, Illinois 60162-1193

Client: Material Service Corporation

SLI Order No.: 6503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-9
Sample Type: SOIL

Date Collected: 03/14/95 13:30:00
SLI ID: 6503301-07A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						9310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	213	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	434	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	618	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	596	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	479	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	1970	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	1550	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	226	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	491	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	1780	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	5.18	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108-38-3 / 106-42-3	17.1	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	6.22	ug/kg	2.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	108			03/16/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Lilli Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: S5013D1
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-20
Sample Type: SOIL

Date Collected: 03/14/95 12:50:00
SLI ID: S5013D1-08A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	50.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	12.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	86.3	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	5.92	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	108			03/16/95	FR	

Illinois Department of Public Health #17618 Illinois Environmental Protection Agency #100225
Member of International Association of Environmental Testing Laboratories

Reported: March 23, 1995
LEVEL I REPORT
Page Number: 9

#1-800-783-LABS

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Litt Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-11
Sample Type: SOIL

Date Collected: 03/14/95 13:00:00
SLI ID: S503301-09A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	83	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108-38-3 / 106-42-3	<3.00	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	96			03/16/95	FR	

Illinois Department of Public Health #17555; Illinois Environmental Protection Agency #100226
Member of International Association of Environmental Testing Laboratories

Reported: March 23, 1995
LEVEL I REPORT
Page Number: 10

Fax: (708) 544-6587
#1-800-763-LABS

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Lin Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

COMMENTS

NOTE: Volatiles Anaysis for method 8020 sample S5-03-301-04 External standard calculations used due to matrix interference with the internal standard. Matrix interferences also caused the surrogate to fail resulting in flagging the results J + UJ. The sample was run three times with the failures occurring all three times.

LIMIT: The lowest concentration that can be reliably achieved within specified requirements of precision and accuracy during routine laboratory operating conditions. Limit may also represent a project specific reporting level.
NOTE: All results reported in wet weight unless otherwise indicated.
Please refer to glossary for abbreviations and definitions.

Analysis Reviewed By: [signature] 3/23/95

Reported By: MICHELE (Last Page) Verified By: JH

SUBURBAN LABORATORIES, Inc.

140 Lin Drive Hillside, IL 60162

Phone: (708) 544-3260
Fax: (708) 544-0587

CHAIN OF CUSTODY RECORD

Page (1) of (1)

Company Name: Material Service Corp
Company Address: 4226 Lawndale Ave
Property Owner: MASC
Property Location: Ogden & Lawndale
Project Name#: Ogden & Lawndale
Project Manager (Report to): Greg O'Toole
Sample Collector(s): Michael McHugh

TURNAROUND TIME REQUESTED: [✓] Normal [ ] RUSH
Date Needed:
Are Samples Hazardous? Yes [ ] No [✓]
Final/Closure Sample? Yes [ ] No [✓]
Phone #: (708) 442-4601
Fax #: (708) 442-4641

ANALYSIS & METHOD REQUESTED: BETX (Lust) 8020; PNAs (Lust) 8310

Reporting Format:
Purchase Order #:
Courier:

LAB USE ONLY
SLI ORDER #: 55-3-301
Temperature of Received Samples: 9.0°

FIELD IDENTIFICATION	COLLECTION Date	COLLECTION Time	SAMPLE Matrix	SAMPLE Device	Number & Type of CONTAINERS	PRESERV. TYPE	FIELD SCREEN	A/R	SAMPLE CONDITION	SLI SAMPLE #
B-1	3/14/95	8:50	S	G	1 Rzoc (C) 1 Rzoc (D)	ICE	1 ppm	A	O.C	01
B-2	/ /	9:20					30 ppm			02
B-4	/ /	10:20					180 ppm			03
B-5B	/ /	10:50					210 ppm			04
B-6	/ /	11:25					0.2 ppm			05
B-7	/ /	11:55					0.5 ppm			06
B-9	/ /	12:30					0.4 ppm			07
B-10	/ /	12:50					2 ppm			08
B-11	/ /	13:00					0.2 ppm	L	L	09
	/ /									

MATRIX: Soil(S), Water(W), Drinking Water(DW), Air(A), Wipe(W), Other(O) A=Aqueous, R=Product
SAMPLE DEVICE: Grab(G), Composite(C), Drill Rig(D), Hand Auger(H), Split Spoon(S), Water Sampling Other(O)
PRESERVATION: None(N), Ice(I), 4oz Vial(V), 2oz(C), 4oz(D), 8oz(E), 16oz(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W)
PRESERVATION: H2SO4, HNO3(2), HCl 3 D4(3), NaOH(4), NaCO(5), Other(O), JOB#/Lot# or Lot. N/A if not applicable.

COMMENTS & SPECIAL INSTRUCTIONS:

Relinquished By: Michael McHugh	Date: 3/14/95	3. Relinquished By:	Date: / /
Received By:	Time: 3:25pm	Received By:	Time:
2. Relinquished By:	Date: / /	4. Relinquished By:	Date: / /
Received By:	Time:	Received By:	Time:

( ) # of Attached Sheets

PLEASE FILL OUT CHAIN OF CUSTODY RECORD COMPLETELY!

White - Original (Return with report), Yellow - Lab Copy, Pink - Sampler Copy

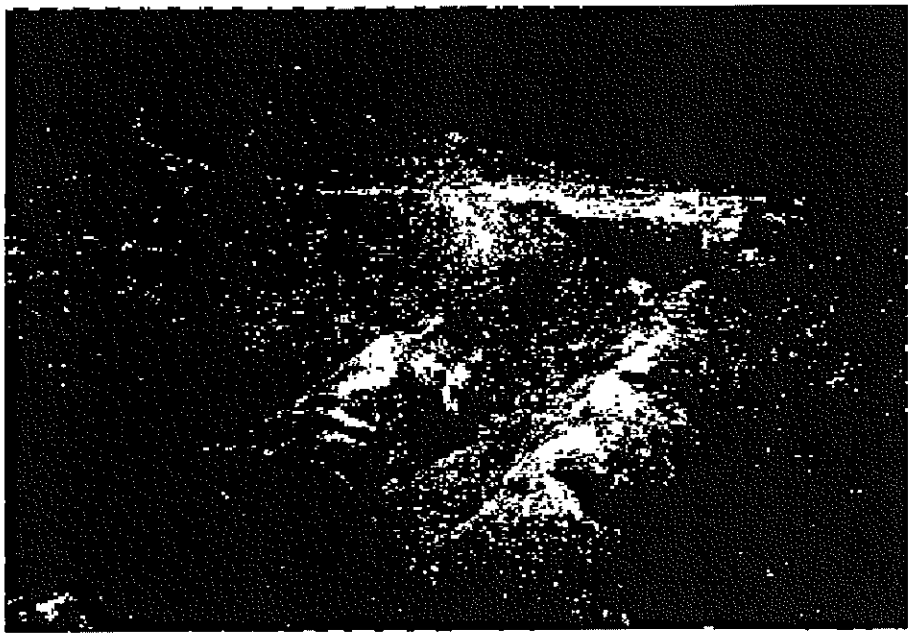
printed 08/20/2007 4:41PM by apatt31 p. 8/26

APPENDIX G

PHOTOGRAPHS

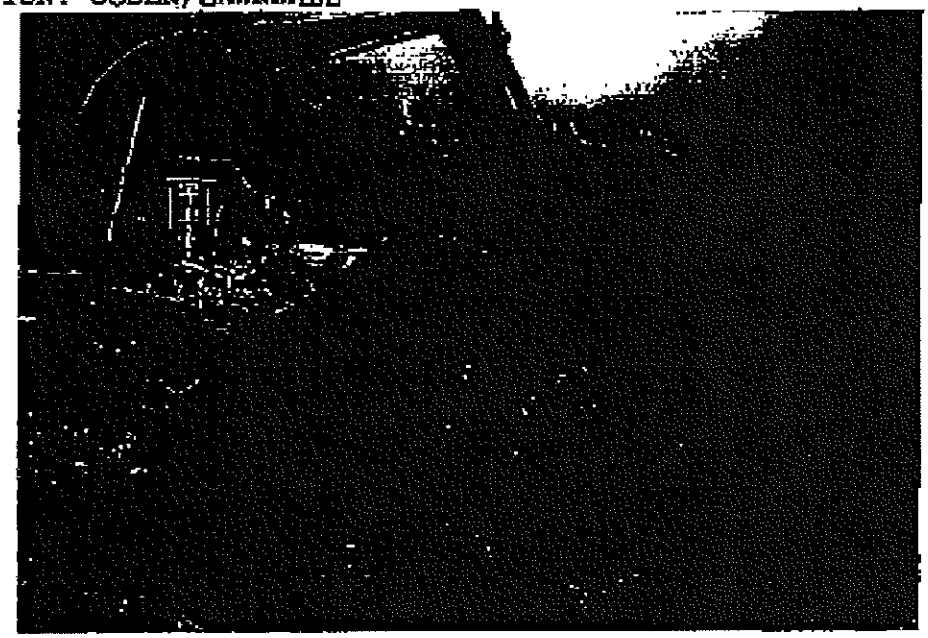
PHOTOGRAPH 1: VIEW OF 1,000-GALLON TANKS IN GROUND
LOCATION: OGDEN/LAWNDALE

PHOTOGRAPH 2: VIEW OF 3,000- AND 6,000-GALLON TANKS
LOCATION: OGDEN/LAWNDALE



PHOTOGRAPH 3: TANK REMOVAL

LOCATION: OGDEN/LAWNDALE

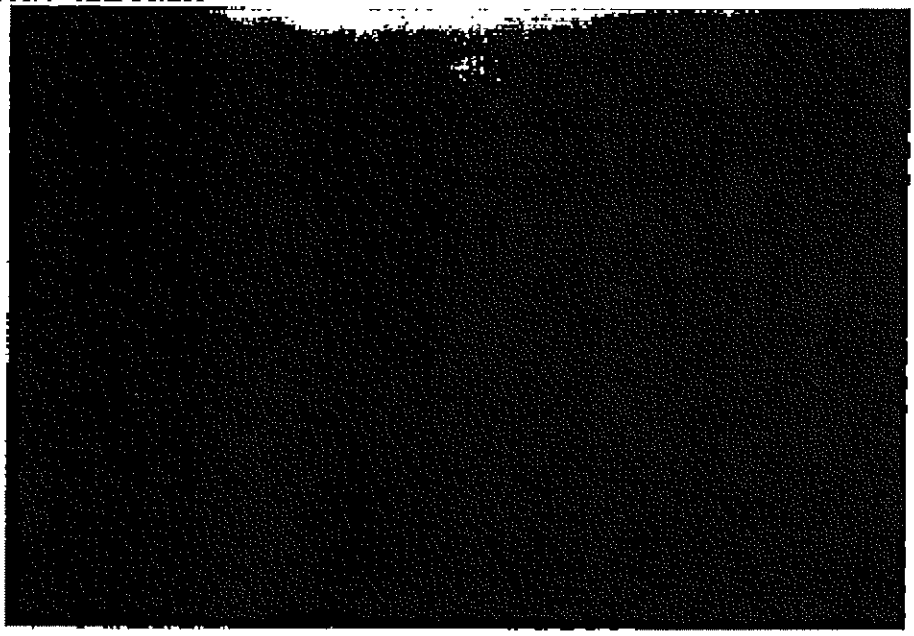


PHOTOGRAPH 4: REMOVED TANK
LOCATION: OGDEN/LAWNDALE

PHOTOGRAPH 5: TANK CLEANING OPERATIONS
LOCATION: OGDEN/LAWNDALE

PHOTOGRAPH 6: 6,000-GALLON TANK HAULED OFF SITE AS SCRAP METAL
LOCATION: OGDEN/LAWNDALE

PHOTOGRAPH 7: EXCAVATION LOCATION
LOCATION: HAFFNER



PHOTOGRAPH 8: EXPOSED 8,000-GALLON TANK AND FILL PIPE
LOCATION: HAFFNER

printed 06/26/2007 4:43PM by cpc4431 pr 1/47 L 170000025548 0311715020 MATERIAL SVC CORP 21A 03/10/1998
109,379 L008487 B:33073 F:50497 I:00000025 4:14PM 01/25/2005 EPA4247 01/25/2005

0311715020-Cook
Material Service Corp
Rust Tech

Material Service Corporation

Environmental Services Department
4226 Lawndale
Lyons, Illinois 60534-1199
312-443-7103
FAX:312-443-7141

March 10, 1998

Illinois Environmental Protection Agency
Bureau of Land #24
LUST Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Corrective Action Completion Report
Material Service Corporation - Yard 18 Ogden and Lawndale Site
IEMA Incident Number 951401

Dear Sir:

Enclosed, please find the *Corrective Action Completion Report* for the above referenced incident number.

Please issue a "No Further Remediation" letter for IEMA Incident Number 951401.

Should you have any questions regarding this matter, please contact Mark Strack of my staff at 312-443-7108, or me at your convenience.

Sincerely,

MATERIAL SERVICE CORPORATION

RECEIVED
MAR 2 7 1998
IEPA/BOL

Frank M. Werderitsch
Director, Environmental Services

FMW:mas
encl.
cc: G. O'Toole
M. Strack

SCREENED
M M

CORRECTIVE ACTION COMPLETION REPORT
MATERIAL SERVICE CORPORATION
YARD 18

OGDEN AND LAWNDALE SITE

IEMA INCIDENT # 951401
March 10, 1998

RECEIVED
MAR 2 7 1998
IEPA/BOL

Prepared for:
Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program

Prepared by:
Material Service Corporation
Environmental Services Department

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement, or representation, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Corrective Action Completion Report

A. Site Identification

IEMA Incident # (6 digit): 951601 IEPA Generator # (10 digit): 0311715020

Site Name: MATERIAL SERVICE CORPORATION - YARD 18 (Ogden & Lawndale Site)

Site Address (Not a P.O. Box): 4226 S. Lawndale Ave.

City: Lyons County: Cook

RECEIVED
MAR 27 1998
IEPA/BOL

B. Site Information

1. Is this an amended report? Yes ___ No X

2. Has a High Priority Corrective Action Plan been approved? Yes ___ No X
   Date of approval letter: _____

3. This completion report is being submitted pursuant to:

   a. 35 Ill. Adm. Code 731.166 ___
   b. 35 Ill. Adm. Code 732.300(b) X
   c. 35 Ill. Adm. Code 732.400(b) ___
   d. 35 Ill. Adm. Code 732.400(c) ___
   e. 35 Ill. Adm. Code 732.409(a)(2)(b) ___

4. Method of remediation chosen:

   a. Soil Excavation and Disposal
   b. Groundwater N/A

5. Quantity of contaminated media remediated/recovered:

   a. Soil 330 yds.^{3}
   b. Groundwater 0 gals.
   c. Free Product 0 gals.

C. Completion Information

Provide the following:

1. A chronological narrative of corrective action activities;
2. An explanation of how the corrective action activities remediated each of the threats which caused the site to be classified "High Priority";
3. An explanation of how corrective action addressed the exposure pathway that caused the site to be classified "High Priority";
4. A discussion of how the cleanup objectives were determined;
5. Media sampling and analytical procedures to verify completion of remediation;
6. The analytical results and cleanup objectives in tabular format;
7. Laboratory reports;
8. Soil boring logs;
9. Monitoring well logs;
10. Laboratory Certification;
11. Applicable Professional Engineer Certification;
12. Site maps to scale and oriented north showing the:

    a. Final soil sample locations demonstrating completion of remediation;
    b. Groundwater monitoring well locations;
    c. Groundwater recovery/discharge points;
    d. Plume of contamination as defined by laboratory analyses;
    e. Area remediated.

13. A legal description of the site or a reference to a plat showing the site boundaries.

14. The real estate tax index/parcel index number.

15. Photographs documenting corrective action activities.

D. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner		**Operator**	
Name:	Frank M. Werderitsch	Name:	
Title:	Director, Environmental Services	Title:	
Address:	4226 S. Lawndale Ave.	Address:	
	Lyons, IL 60534-1199		
Phone:	312/443-7103	Phone:	

Signature: [illegible] Signature: _____

Date: 3-10-98 Date: _____

Consultant

Firm: _____

Contact: _____

Title: _____

Address: _____

_____

Phone: _____

Signature: _____

Date: _____

SECTION C. - COMPLETION INFORMATION

1 Timetable and narrative of corrective action activities:

DATE	ACTIVITY
03/14/95	A Phase II subsurface soil investigation was performed at the site.
06/27/95	At the Ogden and Lawndale site, the USTs and ancillary piping were removed by Producers Construction, a division of MSC. No tank fluids were removed. Material Service Corporation (MSC) contracted Gerry Bernardo, Marine Chemist from Waterways Transportation Service (WTS), to perform monitoring of tank opening activities. MSC monitored for vapors in the work zone. No OSFM Tank Specialist was on hand to oversee UST removal operations, however, permission to continue was given by Jan Spoor at the OSFM Springfield Office. Deputy Fire Chief Norb of the Lyons Fire Department was present during the tank removal. The USTs were inerted by filling to >95% CO_2 before being removed from the excavation. The vessels were again filled with >95% CO_2, WTS issued a certificate for safe hot work, and each end was opened with a cutting torch. CO_2 in the vessels was allowed to naturally dissipate. Workers were not permitted to enter the vessel until the internal atmosphere was monitored and found to be safe. Sludge/heals were transferred into a DOT-approved drum and placed at a secure location on site by Producers Construction.

The UST excavation was overexcavated four feet on each side of the former USTs. The excavated backfill soils were stockpiled on visqueen and covered with visqueen pending soil disposal as a Special Waste. Clean stone backfill was placed back into the excavation.

8/30/95-
9/31/95 — A total of 330-yd^3 of Special Waste backfill soils from the Ogden and Lawndale site were disposed at Woodland Landfill.

2 Not applicable

3 Not Applicable

4 Cleanup objectives were based on 35 IAC Section 742 using Appendix B, Table A - Residential Properties, with the Groundwater Ingestion Route for Benzene and Ethylbenzene eliminated because the Village of Lyons has an ordinance, which will operate as an institutional control, prohibiting the installation of potable wells. A copy of the ordinance appears in Appendix H. The cleanup objectives are further based on the elimination of the inhalation route for Benzene and the ingestion route for Dibenzo(a,h)Anthracene and Benzo(a)pyrene by the existence of an engineered barrier of three feet of clean topsoil on the site which will be required to remain on site.

5 Soil samples obtained during the Phase II investigation were analyzed for BETX and PNAs in accordance with EPA Methods 8020 and 8310 respectively.

6 A copy of the formal laboratory results in tabular format of soil samples collected during the Phase II investigation are contained in Appendix A.

7 Laboratory reports of soil samples collected during the Phase II investigation are contained in Appendix B.

8 Soil boring logs are contained in Appendix C.

9 Not Applicable.

10 Laboratory reports are contained in Appendix B.

printed 08/20/2007 4:43PM by epa4431 p. 8/47

11 A Professional Engineer Certification for Incident Number 951401 is contained in Appendix D.

12 Site maps showing the soil sample locations of the Phase II investigation and the area excavated during the UST removals are contained in Appendix E.

13 A legal description of the property is contained in Appendix F.

14 The Real Estate Tax Index Number for the property is 18-02-207-004.

15 Photographs of corrective action activities are contained in the IEPA 45 Day Report dated March 25, 1996.

APPENDIX A

LABORATORY RESULTS IN TABULAR FORMAT

Material Service Corporation - Yard 18
Ogden and Lawndale Site
IEMA Incident Number 951401
Soil Sample Results

Location	Concentration (ppb)					
	Benzene	Ethylbenzene	Toluene	Total Xylenes	Acenaphthene	Anthracene
B-1	<2.00	2.18	4.47	8.36	<660	<660
B-2	1300	1650	338	4120	1130	<660
B-4	1540	3920	3370	18370	980	<660
B-5B	<200	15100	<200	37600	2200	<660
B-6	<2.00	<2.00	<2.00	3.21	<660	<660
B-7	<2.00	<2.00	<2.00	<3.00	<660	<660
B-9	<2.00	5.18	<2.00	23.52	<660	<660
B-10	86.3	<2.00	<2.00	5.92	<660	<660
B-11	<2.00	<2.00	<2.00	<3.00	<660	<660
Objective Levels*	22,000	400,000	12,000	150,000	570,000	12,000,000

* Cleanup objectives were based on 35 IAC Section 742 using Appendix B, Table A - Residential Properties, with the Groundwater Ingestion Route for Benzene and Ethylbenzene eliminated because the Village of Lyons has an ordinance, which will operate as an institutional control, prohibiting the installation of potable wells. A copy of the ordinance appears in Appendix H. The cleanup objectives are further based on the elimination of the inhalation route for Benzene and the ingestion route for Dibenzo(a,h)Anthracene and Benzo(a)pyrene by the existence of an engineered barrier of three feet of clean topsoil on the site which will be required to remain on site.

Material Service Corporation - Yard 18
Ogden and Lawndale Site
IEMA Incident Number 951401
Soil Sample Results

Location	Concentration (ppb)				
	Benzo(a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (k) Fluoranthene	Chrysene
B-1	30.2	<15.4	74.7	15.6	<100
B-2	<8.71	<15.4	38.1	<11.4	<100
B-4	<8.71	<15.4	42.1	<11.4	<100
B-5m	<8.71	<15.4	<12.1	<11.4	<100
B-6	25.0	<15.4	94.7	52.7	<100
B-7	<8.71	<15.4	<12.1	<11.4	<100
B-9	213	434	616	596	1970
B-10	<8.71	<15.4	50.7	<11.4	<100
B-11	<8.71	<15.4	<12.1	<11.4	<100
Objective Levels *	900	8,000	900	9,000	88,000

* Cleanup objectives were based on 35 IAC Section 742 using Appendix B, Table A - Residential Properties, with the Groundwater Ingestion Route for Benzene and Ethylbenzene eliminated because the Village of Lyons has an ordinance, which will operate as an institutional control, prohibiting the installation of potable wells. A copy of the ordinance appears in Appendix H. The cleanup objectives are further based on the elimination of the inhalation route for Benzene and the ingestion route for Dibenzo(a,h)Anthracene and Benzo(a)pyrene by the existence of an engineered barrier of three feet of clean topsoil on the site which will be required to remain on site.

Material Service Corporation - Yard 18
Ogden and Lawndale Site
IEMA Incident Number 951401
Soil Sample Results

Location	Concentration (ppb)					
	Dibenzo (a, h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-c-d) Pyrene	Napthalene	Pyrene
B-1	37.5	<660	<140	<28.8	<660	274
B-2	<20.1	<660	644	<28.8	<660	<180
B-4	37.0	<660	<140	<28.8	<660	<180
B-5R	<20.1	<660	244	<28.8	<660	<180
B-6	95.5	<660	<140	32.6	<660	<180
B-7	<20.1	<660	<140	<28.8	<660	<180
B-9	1550	<660	226	491	<660	1780
B-10	<20.1	<660	<140	<28.8	<660	<180
B-11	<20.1	<660	<140	<28.8	<660	<180
Objective Level*	2,000	3,100,000	560,000	900	84,000	2,300,000

* Cleanup objectives were based on 35 IAC Section 742 using Appendix B, Table A - Residential Properties, with the Groundwater Ingestion Route for Benzene and Ethylbenzene eliminated because the Village of Lyons has an ordinance, which will operate as an institutional control, prohibiting the installation of potable wells. A copy of the ordinance appears in Appendix H. The cleanup objectives are further based on the elimination of the inhalation route for Benzene and the ingestion route for Dibenzo(a,h)Anthracene and Benzo(a)pyrene by the existence of an engineered barrier of three feet of clean topsoil on the site which will be required to remain on site.

APPENDIX B

LABORATORY REPORTS

RECEIVED
MAR 27 1995
ENVIRONMENTAL SERVICES

SUBURBAN LABORATORIES, Inc.
"Analytical Testing"
4140 Lilt Drive • Hillside, Illinois 60162-1183

FINAL REPORT OF LABORATORY ANALYSIS

Material Service Corporation
6225 Lawndale Avenue
Lyons, IL 60534

Attention: Gary O'Toole

SLI Order No.: 9503301
Project ID.: MSC OGDEN & LAWNDALE
P.O. #: 930187
Samples Received: 03/14/95
Collected By: CLIENT

Sample ID: B-1
Sample Type: SOIL

Date Collected: 03/14/95 08:50:00
SLI ID: 9503301-01A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	81	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	30.2	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	74.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	15.6	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	37.5	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	276	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	4.47	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	2.18	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	5.16	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	3.20	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	94			03/15/95	FR	

Illinois Department of Public Health #17333 Illinois Environmental Protection Agency #100225
Member of International Association of Environmental Testing Laboratories

JAN 23 '96 09:35AM MSC ENVIRONMENTAL 708 442 4641 P.5/15

Reported: March 21, 1995
LEVEL I REPORT
Page Number: 2

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lilu Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-2
Sample Type: SOIL

Date Collected: 03/14/95 09:20:00
SLI ID: S503301-02A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	88	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	1130	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	2640	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	38.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	644	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	1300	ug/kg	200	03/17/95	FR	
Toluene 108-88-3	338	ug/kg	200	03/17/95	FR	
Ethyl-benzene 100-41-4	1650	ug/kg	200	03/17/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	2880	ug/kg	200	03/17/95	FR	
o-Xylene 95-47-6	1240	ug/kg	200	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	84			03/17/95	FR	

LEVEL I REPORT
Page Number: 3

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lin Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-4
Sample Type: SOIL

Date Collected: 03/14/95 10:20:00
SLI ID: S503301-03A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	92	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	880	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	2460	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 52-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	42.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	37.0	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	1540	ug/kg	100	03/17/95	FR	
Toluene 108-88-3	3370	ug/kg	100	03/17/95	FR	
Ethyl-benzene 100-41-4	3920	ug/kg	100	03/17/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	13800	ug/kg	100	03/17/95	FR	
o-Xylene 95-47-6	4570	ug/kg	100	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	113			03/17/95	FR	

Illinois Department of Public Health #17585; Illinois Environmental Protection Agency #100225
Member of International Association of Environmental Testing Laboratories

LEVEL I REPORT
Page Number: 4

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lilt Drive • Hillside, Illinois 60162-1183

Client: Memorial Services Corporation

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-5B
Sample Type: SOIL

Date Collected: 03/14/95 10:50:00
SLI ID: S503301-04A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	2200	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	244	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<200 UJ	ug/kg	200	03/17/95	FR	
Toluene 108-88-3	<200 UJ	ug/kg	200	03/17/95	FR	
Ethyl-benzene 100-41-4	25100 J	ug/kg	200	03/17/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	27000 J	ug/kg	200	03/17/95	FR	
o-Xylene 95-47-6	10600 J	ug/kg	200	03/17/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	243 Q			03/17/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Lilt Drive * Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: 5503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-6
Sample Type: SOIL

Date Collected: 03/14/95 11:25:00
SLI ID: 5503301-05A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	86	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	25.0	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	94.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	52.7	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	98.5	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	32.6	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	3.21	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	94			03/16/95	FR	

LEVEL I REPORT
Page Number: 6

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Lin Drive • Hillside, Illinois 60162-1189

Client: Material Service Corporation

SLI Order No.: 5503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: R-7
Sample Type: SOIL

Date Collected: 03/14/95 11:55:00
SLI ID: 5503301-06A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			RS	EPA 3550
Solids-Total	80	%	0.001	03/17/95	RS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/20/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/20/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/20/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/20/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/20/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/20/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/20/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/20/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/20/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/20/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/20/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/20/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/20/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/20/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/20/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/20/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108-38-3 / 106-42-3	<3.00	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	93			03/16/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"

4140 Lix Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: E-9
Sample Type: SOIL

Date Collected: 03/14/95 12:30:00
SLI ID: S503301-07A

PARAMETER	RESULT 03/17/95	UNITS DATE	LIMIT	DATE ANALYZED	BY AS	METHOD EPA 3550
EXTRACTION (PNA)						
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3 8310
PNAs by HPLC						
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	213	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	434	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	618	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	536	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	473	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	1970	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	1550	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	226	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	491	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	1780	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	5.18	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	17.3	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	6.22	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	108			03/16/95	FR	

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Litt Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: M-10
Sample Type: SOIL

Date Collected: 03/14/95 12:50:00
SLI ID: S503301-08A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	91	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	50.7	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	86.3	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene [illegible] / [illegible]	5.92	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	108			03/16/95	FR	

JAN 23 '96 09:37AM MSC ENVIRONMENTAL 708 442 4641 P.12/15

Reported: March 23, 1995
LEVEL I REPORT
Page Number: 9

SUBURBAN LABORATORIES, Inc.

"Analytical Teamy"

4140 Lin Drive • Hillside, Illinois 60162-1183

Client: Material Service Corporation

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

Sample ID: B-11
Sample Type: SOIL

Date Collected: 03/14/95 13:00:00
SLI ID: S503301-09A

PARAMETER	RESULT	UNITS	LIMIT	DATE ANALYZED	BY	METHOD
EXTRACTION (PNA)	03/17/95	DATE			AS	EPA 3550
Solids-Total	83	%	0.001	03/17/95	AS	EPA 160.3
PNAs by HPLC						8310
Acenaphthene 83-32-9	<660	ug/kgDW	660	03/21/95	EPA	
Acenaphthylene 208-96-8	<660	ug/kgDW	660	03/21/95	EPA	
Anthracene 120-12-7	<660	ug/kgDW	660	03/21/95	EPA	
Benzo(a)anthracene 56-55-3	<8.71	ug/kgDW	8.71	03/21/95	EPA	
Benzo(a)pyrene 50-32-8	<15.4	ug/kgDW	15.4	03/21/95	EPA	
Benzo(b)fluoranthene 205-99-2	<12.1	ug/kgDW	12.1	03/21/95	EPA	
Benzo(k)fluoranthene 207-08-9	<11.4	ug/kgDW	11.4	03/21/95	EPA	
Benzo(g,h,i)perylene 191-24-2	<50.9	ug/kgDW	50.9	03/21/95	EPA	
Chrysene 218-01-9	<100	ug/kgDW	100	03/21/95	EPA	
Dibenzo(a,h)anthracene 53-70-3	<20.1	ug/kgDW	20.1	03/21/95	EPA	
Fluoranthene 206-44-0	<660	ug/kgDW	660	03/21/95	EPA	
Fluorene 86-73-7	<140	ug/kgDW	140	03/21/95	EPA	
Indeno(1,2,3-cd)pyrene 193-39-5	<28.8	ug/kgDW	28.8	03/21/95	EPA	
Naphthalene 91-20-3	<660	ug/kgDW	660	03/21/95	EPA	
Phenanthrene 85-01-8	<660	ug/kgDW	660	03/21/95	EPA	
Pyrene 129-00-0	<180	ug/kgDW	180	03/21/95	EPA	
TARGET VOLATILES (BTEX)						EPA 8020
Benzene 71-43-2	<2.00	ug/kg	2.00	03/16/95	FR	
Toluene 108-88-3	<2.00	ug/kg	2.00	03/16/95	FR	
Ethyl-benzene 100-41-4	<2.00	ug/kg	2.00	03/16/95	FR	
** m-Xylene / p-Xylene 108383 / 106423	<3.00	ug/kg	3.00	03/16/95	FR	
o-Xylene 95-47-6	<3.00	ug/kg	3.00	03/16/95	FR	
SURROGATE STANDARD	% RECOVERY					
Fluorobenzene	96			03/16/95	FR	

Reported: March 23, 1995
LEVEL I REPORT
Page Number: 10

Fax (708) 544-0587
#1-800-783-LABS

SUBURBAN LABORATORIES, Inc.

"Analytical Testing"
4140 Litt Drive • Hillside, Illinois 60162-1183

Client: *Material Service Corporation*

SLI Order No.: S503301
Project ID.: MSC OGDEN & LAWNDALE

COMMENTS

NOTE: Volatiles Anaysis for method 8020 sample SS-03-301-04 External standard calculations used due to matrix interference with the internal standard. Matrix interferences also caused the surrogate to fail resulting in flagging the results J + UJ. The sample was run three times with the failures occurring all three times.

LIMIT: The lowest concentration that can be reliably achieved within specified requirements of precision and accuracy during routine laboratory operating conditions. Limit may also represent a project specific reporting level.
NOTE: All results reported in wet weight unless otherwise indicated.
Please refer to glossary for abbreviations and definitions.

Analysis Reviewed By: J McDonald 3/23/95

Reported By: MICHELE (Last Page) Verified By: JM

Illinois Department of Public Health #17682 Illinois Environmental Protection Agency #100225
Member of International Association of Environmental Testing Laboratories

SUBURBAN LABORATORIES, Inc.
140 Lilt Drive Hillside, IL 60162

Phone: (708) 544-3260
Fax: (708) 544-6667

CHAIN OF CUSTODY RECORD

Page (1) of (1)

Company Name: Material Service Corp
Company Address: 4224 Lawndale Ave
Property Owner: MSC
Property Location: Ogden & Lawndale
Project Name/#: Ogden & Lawndale
Project Manager (Report to): Gary O'Toole
Sample Collector(s): Michael Mellon

TURNAROUND TIME REQUESTED: [✓] Normal [ ] RUSH
Date Needed:
Are Samples Hazardous? [ ] Yes [✓] No
Final/Closure Samples: [ ] Yes [✓] No
Phone #: (708) 442-4601
Fax #: (708) 442-4641

ANALYSIS & METHOD REQUESTED: RCRA (List) 8020; PNA's (List) 8310

Reporting Format:
Purchase Order #:
Courier:

LAB USE ONLY
SLI ORDER #: 55-3-301
Temperature of Received Samples: 20°C

FIELD IDENTIFICATION	COLLECTION Date	COLLECTION Time	SAMPLE Matrix	SAMPLE Device	Number & Type of CONTAINERS	PRESERV. TYPE	FIELD SCREEN	NR	SAMPLE CONDITION	SLI SAMPLE #
B-1	3/14/95	8:50	S	G	1 x 2oz (A) 1 x 4oz (B)	ICE	1 ppm	A	O.C	01
B-2	" "	9:20					30 ppm			02
B-4	" "	10:20					180 ppm			03
B-5R	" "	12:50					210 ppm			04
B-6	" "	11:25					0.2 ppm			05
B-7	" "	11:55					0.5 ppm			06
B-9	" "	12:30					0.4 ppm			07
B-10	" "	12:50					2 ppm			08
B-11	" "	13:00					0.2 ppm			09

MATRIX: Water-Well(W), Water(W), Drilling Water(DW), Air(A), Wipe(W), Other(O) (Acceptable, Rejected)
SAMPLING DEVICE: Dipper(D), Composite(C), Dual Rig(D), Hand Auger(HA), Split Spoon(SS), Hand Spatula(H), Other(O)
CONTAINER: 40ml Vial(V), 60ml Vial(V), 200(C), 4oz(B), 8oz(E), 1Liter(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W)
PRESERVATION: HNO3(N), HCl(H), H2SO4(S), NaOH(O), NaCl(S), Other(O), Not Required or Ice, Not Filed, Approx. PH

COMMENTS & SPECIAL INSTRUCTIONS:

Relinquished By: Michael Mellon	Date: 3/14/95	2. Relinquished By:	Date: / /
Received By: Anne Ruff	Time: 3:20pm	Received By:	Time:
Relinquished By:	Date: / /	4. Relinquished By:	Date: / /
Received By:	Time:	Received By:	Time:

PLEASE FILL OUT CHAIN OF CUSTODY RECORD COMPLETELY!

( ) # of Attached Sheets

White - Original (Return with report), Yellow - Lab Copy, Pink - Sampler Copy

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APPENDIX C

SOIL BORING LOGS

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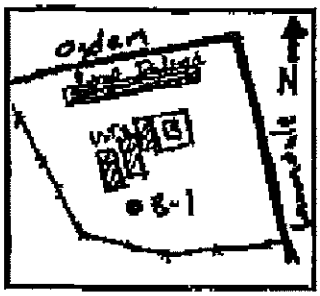
Versar INC.

TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-1



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 5'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 8:50 from 4 to 4.8'
- Bedrock @ 4.8'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
										1	Gravel & sand fill w/ silt/clay, dark brown, stiff, moist	
1	19	10	12	8	22	18		1.0				
								0.5		2	Silty clay (CL) med brown, firm, moist, trace sand, with gravel	CL
2	7	9	4	6	13	20		0.5		3		
								1.0		4		
										5	Bedrock	
										6		
										7		
										8		
										9		
										10		
										11		
										12		
										13		
										14		

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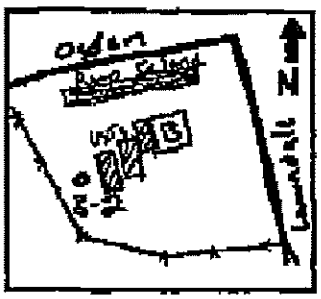
Versar INC. TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-2



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 16F8.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 9.4'

WATER OBSERVATION: (water in splitspoon)

DRILLING COMPANY: Mining Eng DRILLER: J. W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 9:20 from 7.7 to 9.3'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET) / SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
									1	Silty clay fill w/ sand, gravel, and asphalt fragments. Medium brown, firm, moist	
1	11	10	8	9	18	10		0.2	2		
									3		
2	2	3	10	15	13	20		0.5	4	Silty Clay (CC) Medium brown, firm, moist, with sand, with gravel	CC
									5		
3	3	8	6	8	14	21		2	6		
								5	7		
4	4	3	3	3	6	9		6	8	Silty Sand (SP) dark gray, loose, wet, trace clay, trace gravel, trace coal fragments, strong petroleum odor	SP
								30	9		
									10	Bedrock	
									11		
									12		
									13		
									14		

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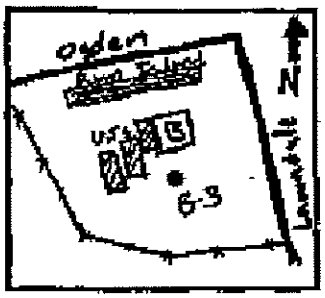
Versar INC.

TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-3



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1698.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 6.9'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 9:50 from 5.7 to 6.7'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Broken Asphalt and gravel fill	
1	15	7	5	4	12	16		3		1	Silty Clay fill, brown, firm, moist, with sand, trace gravel	
								20		2	Organic Silty Clay (OL) dark brown, firm, moist, trace organic root fragments, trace sand	OL
2	3	4	7	6	11	14		7		3	Silty Clay (CL) med brown, firm, moist, trace sand, trace gravel	CL
								4		4		
3	4	4	14	50/5"	18	8		45		5	Silty Sand (SP) brownish gray, loose, wet/saturated, trace gravel	SP
								110		6	Broken Limestone fragments (Bedrock)	
										7		
										8		
										9		
										10		
										11		
										12		
										13		
										14		

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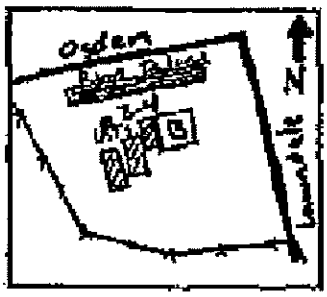
Versar INC. FIELD BORING LOG SHEET 1 OF 1

TECHNICAL OPERATIONS

BORING No. B-4



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 ~ Ogden & Lawndale PROJECT NO.: 1658.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 7'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 10:20 from 6.0 to 6.7'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Broken Asphalt & gravel fill	
1	6	4	2	3	6			0.2		1	Silty Clay fill & Sand fill, Brown, Firm/Loose, moist, w/gravel	
								0.5		2		
2	4	4	9	7	13			0.5		3	Silty Clay (CL) medium grayish brown, firm, moist, with Sand, with gravel	CL
								4		4		
3	25	28	15	50/3"	43			38		5		
								180		6	Silty Sand (SP) med gray, loose, wet to Saturated, trace clay, trace gravel	SP
										7	Bedrock	
										8		
										9		
										10		
										11		
										12		
										13		
										14		

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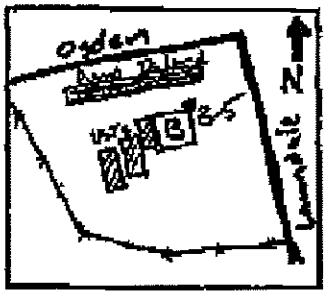
Versar INC.

TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-5



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 9'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX/PNAs @ 10:50 from B-5A ~5.5 to 6.0' and B-5B ~7.5 to 9.0'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Broken Asphalt/Concrete and gravel fill	
1	5	5	7	4	11	10		0		1	Silty clay fill, dark brown, firm, moist, w/ sand, trace clay	
2	2	3	4	6	7	17		4.5		2	Organic Silty Clay (OL) Very dark brown, soft/firm, moist, trace root fragments	OL
								8		3	Silty Clay (CL) medium brown, firm, moist, w/ sand	CL
3	2	2	5	16	7	22		180 110		4	Silty Sand (SP) medium brownish gray, loose, wet/saturated	SP
								30		5	Silty clay (CL) medium gray, firm/stiff, moist, w/ sand, trace gravel	CL
4	13	16	20	28	36	18		240 140		6	Silty Sand (SP) medium gray, loose, saturated, trace clay Limestone gravel fragments	SP
										7	Bedrock	
										8		
										9		
										10		
										11		
										12		
										13		
										14		

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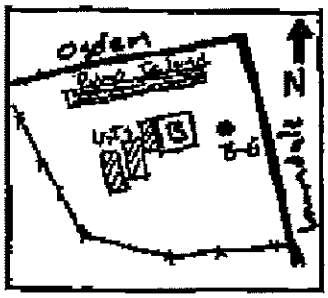
Versar INC. FIELD BORING LOG

SHEET 1 OF 1

TECHNICAL OPERATIONS

BORING No. B-6



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1698.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 7'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 11:25 from 6.0 to 6.4'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
										1	Broken Asphalt and gravel fill	
1	5	5	8	6	13	8		0		2	Organic silty clay (OL) dark brown, firm, moist, trace root fragments	OL
2	4	4	4	4	8	24		0		3	Silty clay (CL) medium brown, firm, moist, trace sand	CL
										4		
										5	← 1" wet silty sand seam @ 4.7'	
3	4	3	5	14	8	19		0		6	Silty sand (SP) medium brownish gray, loose, wet/saturated, trace clay	SP
										7	Silty clay (CL) med brownish gray, firm/stiff, moist, trace sand & gravel	CL
										8	Bedrock @ 7'	
										9		
										10		
										11		
										12		
										13		
										14		

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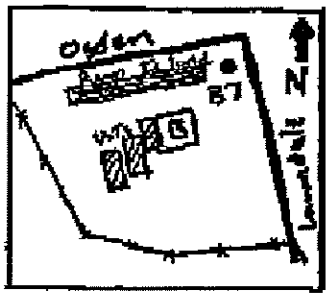
Versar INC.

TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-7



LOCATION SKETCH

CLIENT: Material Service Corp
LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 167R.01C
LOGGED BY: [illegible] GROUND ELEV.:
START DATE: 5/14/05 END DATE: 5/14/05 TOTAL DEPTH: 7'
WATER OBSERVATION: (water in split spoon)
DRILLING COMPANY: [illegible] DRILLER: J.W.
DRILLING METHOD: HSA RIG # MOB
REMARKS: Sampled soil for BTEX & PNAs @ 11:55 from 5.2 to 6.5'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Concrete	
										1	Gravel fill	
1	6	5	5	10	10	18		0.1		2	Organic Silty Clay (OL) dark brown, firm moist, trace root fragments	OL
								0		3	Silty Clay (CL) medium brown, firm moist trace sand & gravel ← grades to with sand @ 3.5' and wet ← grades gray @ 4.2'	
2	3	4	4	5	8	12		0		4		
								0		5		
3	8	10	30	50/4		19		0.2		6	Silty Sand (SP) brownish gray, loose, wet/saturated, trace clay	SP
								0.5		7	Silty Clay (CL) med gray, stiff, moist, w/ limestone fragments	CL
										8	Bedrock	
										9		
										10		
										11		
										12		
										13		
										14		

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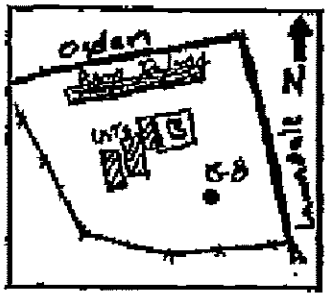
Versar INC.

TECHNICAL OPERATIONS

FIELD BORING LOG

SHEET 1 OF 1

BORING No. B-8



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.012

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 8.5'

WATER OBSERVATION: (water or split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 12:10 from 7.2 to 8.3'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Asphalt fragments & gravel fill	
1	6	15	4	7	19	24		0.4		1	Organic silty clay (OL) dark brown, firm, damp, trace root fragments	OL
								Ø		2	Silty clay (CL) medium brown, stiff, damp, trace sand & gravel grades moist & firm @ 3.2'	CL
2	8	4	4	6	8	17		Ø		3		
								0.2		4	← 1" wet sandy seam @ 4.7'	
3	3	4	6	9	10	22				5	Silty sand (SP) gray, loose, wet/saturated w/ clay, trace gravel	SP
								30		6	Silty clay (CL) gray, firm, wet, w/ sand & gravel	CL
								14		7		
4	8	19	50/8"		NA	12		90		8	Silty sand (SP) gray, loose, saturated, w/ clay, w/ gravel, trace limestone fragments	SP
										9	Bedrock	
										10		
										11		
										12		
										13		
										14		

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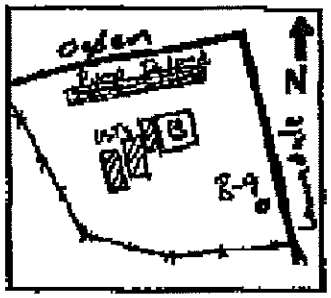
Versar INC. FIELD BORING LOG

SHEET 1 OF 1

TECHNICAL OPERATIONS

BORING No. B-9



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.012

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 5.2'

WATER OBSERVATION: (water in split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 12:30 from 4.5 to 5.2'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
										1	Broken Asphalt & gravel fill grading to silty clay fill w/ sand/gravel	
1	11	6	4	3	10	19		0.2		2	Silty Clay (CL) Medium brown, firm, moist, trace sand	
								Ø		3	← grades medium brownish gray @ 3.3'	CL
2	3	7	4	6	11	21		Ø		4		
								0.4		5	← grades wet, with sand & trace gravel @ 4.6'	
3	50/2"									6	Bedrock	
										7		
										8		
										9		
										10		
										11		
										12		
										13		
										14		

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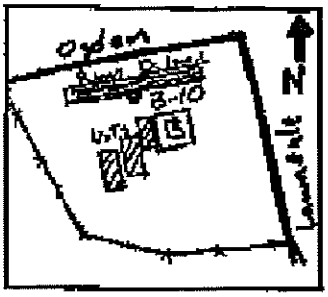
Versar INC. FIELD BORING LOG

SHEET 1 OF 1

TECHNICAL OPERATIONS

BORING No. B-10



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 7.3'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 12:50 from 6.7 to 7.4'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Concrete	
										1	gravel fill	
1	2	3	4	6	7	17		Ø		2	Silty clay fill - brown, firm, damp, w/ sand and w/ gravel	
								Ø		3	Silty Clay (CL) medium brownish grey, firm, moist, w/ sand, trace gravel	CL
2	4	7	9	4	16	20		Ø		4		
								Ø		5		
3	13	9	9	21	18	15		1		6	← grades with gravel and grey @ 5.5'	
								2		7	Silty Sand (SP) grey, loose, saturated w/ silt and limestone fragments/gravel	SP
4	50/4"							2				
										8	Bedrock	
										9		
										10		
										11		
										12		
										13		
										14		

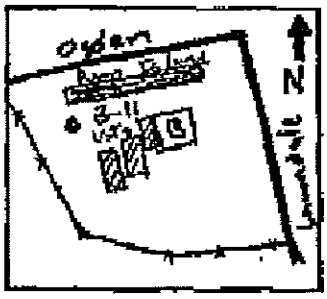
CAD FILE X

Versar INC. FIELD BORING LOG

SHEET 1 OF 1

TECHNICAL OPERATIONS

BORING No. B-11



LOCATION SKETCH

CLIENT: Material Service Corp

LOCATION: Yd 18 - Ogden/Lawndale PROJECT NO.: 1658.01E

LOGGED BY: Melton GROUND ELEV.:

START DATE: 3/14/95 END DATE: 3/14/95 TOTAL DEPTH: 7'

WATER OBSERVATION: (water on split spoon)

DRILLING COMPANY: Wang Eng DRILLER: J.W.

DRILLING METHOD: HSA RIG # MOB

REMARKS: Sampled soil for BETX & PNAs @ 13:00 from 6.1 to 7.0'

SAMPLE No.	BLOWS SET 6"	2nd 6"	3rd 6"	4th 6"	"N" VALUE	RECOVERY IN.	PENETROMETER	PID DETECTOR	DEPTH (FEET)	SAMPLE	DESCRIPTION OF MATERIAL (SOIL DESCRIPTION, USCS, COLOR, CONSISTANCY, MOISTURE, PLASTICITY/DILATANCY FOR COHESIVE SOILS, GRADATION/TEXTURE FOR GRANULAR SOILS, OTHER OBSERVATIONS)	USCS SYMBOL
											Concrete	
										1	gravel fill	
1	8	10	9	11	19	20		Ø			Silty clay (CL) medium brown,	
								Ø		2	firm, moist, trace sand	CL
										3		
2	2	3	6	8	9	22		Ø		4	grades brownish gray, full sand and trace gravel @ 3.9'	
								Ø		5		
3	3	4	3	29	7	17		Ø		6		
								0.2		7	Silty sand (SP) gray, loose, wet trace clay, w/ limestone fragments	SP
											Bedrock	
										8		
										9		
										10		
										11		
										12		
										13		
										14		

CAD FILE

APPENDIX D

PROFESSIONAL ENGINEER CERTIFICATION

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Professional Engineer Certification

A. Site Identification

IEMA Incident # (6 digit): 951401 IEPA Generator # (10 digit): 0311715020

Site Name: MATERIAL SERVICE CORPORATION - YARD 18 (Ogden & Lawndale Site)

Site Address (No P.O. box): 4226 S. Lawndale

City: Lyons County: Cook

RECEIVED
MAR 27 1998
IEPA/BOL

B. Certification

The release from the underground storage tank system(s) identified by the above referenced incident number at the above referenced site has been remediated in accordance with 35 Ill. Adm. Code, Part ☐ 731 or ☒ 732 and other applicable rules and regulations. The remedial activities are described in the Corrective Action Completion Report dated January 12, 1998. The remediation has achieved the objectives set forth by the Agency in:

35 Ill. Adm. Code Part 742	X
Site Specific Cleanup Objectives approved by the Agency in the letter dated _____	
Other (specify) _____	

I certify under penalty of law that the Corrective Action Completion Report, supporting documents and all attachments were prepared under my direction or supervision or were reviewed by me. To the best of my knowledge and belief, the attached Corrective Action Completion Report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of the fine and imprisonment for knowing violations.

Professional Engineer

Name: Warren Jensen

Firm: Material Service Corporation

Address: 4226 S. Lawndale Ave.
Lyons, IL 60534

Phone: 312/443-7157

Ill. Registration No.: 062-043218

License Expiration Date: 11-30-99

Signature: Warren N Jensen

Date: January 12, 1998

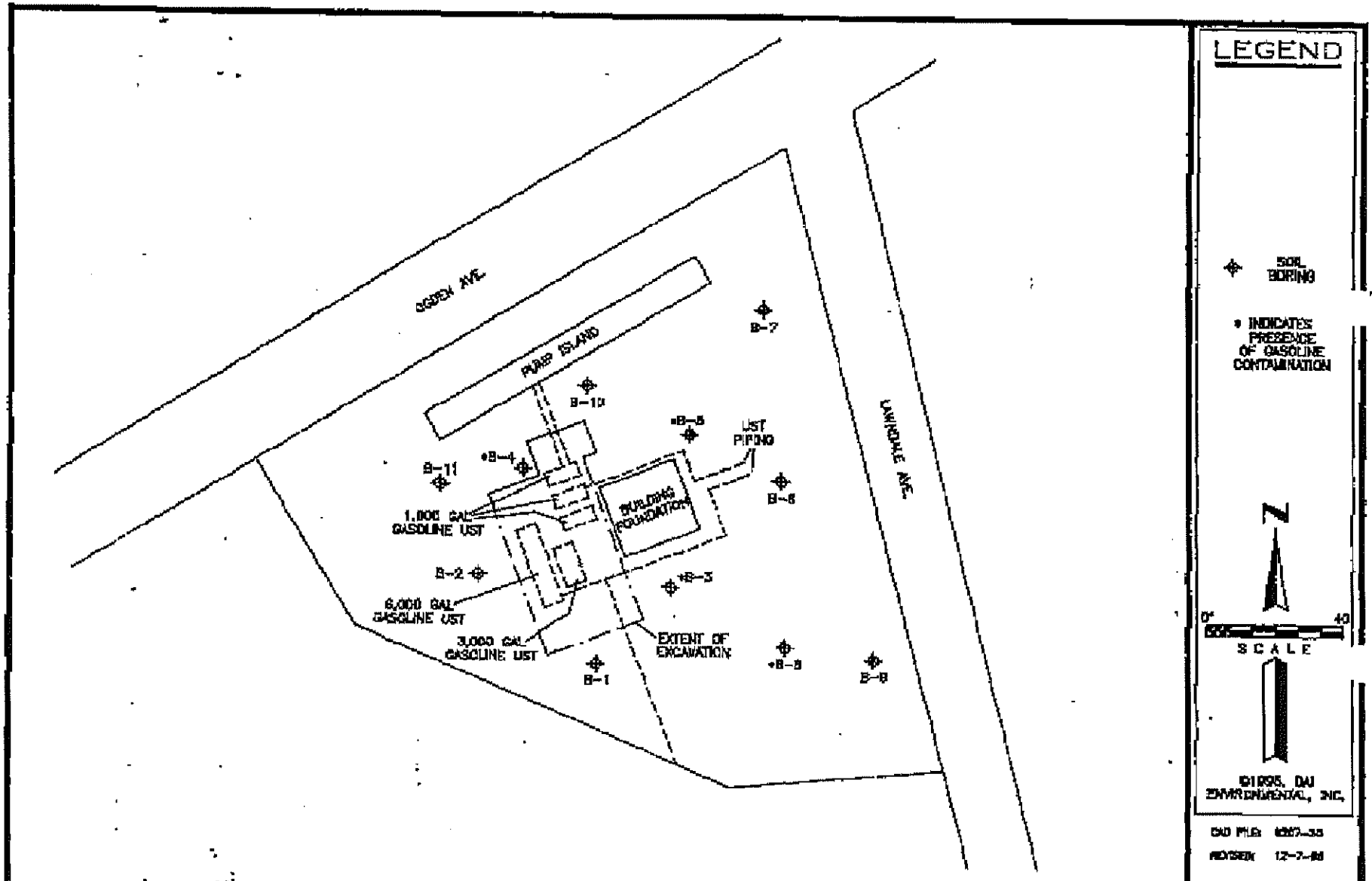
P.E. Seal

WARREN N. JENSEN
062-043218
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

IL 532 2289
LPC 515 Rev. Dec-96

APPENDIX E

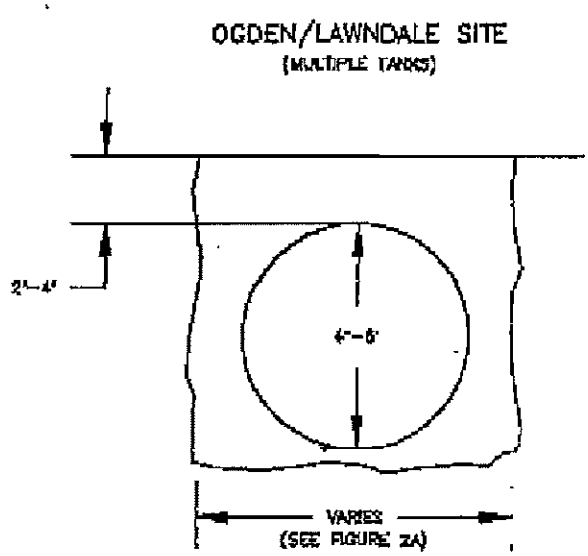
SITE MAPS



DAI ENVIRONMENTAL

MATERIAL SERVICE CORPORATION
OGDEN/LAWNDALE SITE
LYONS, IL

FIGURE 2A
UNDERGROUND STORAGE
TANK MAP



6207-32

DAI ENVIRONMENTAL	MATERIAL SERVICE CORPORATION YARD #18 LYONS, IL	FIGURE 3 TANK CROSS SECTIONS AND EXCAVATIONS

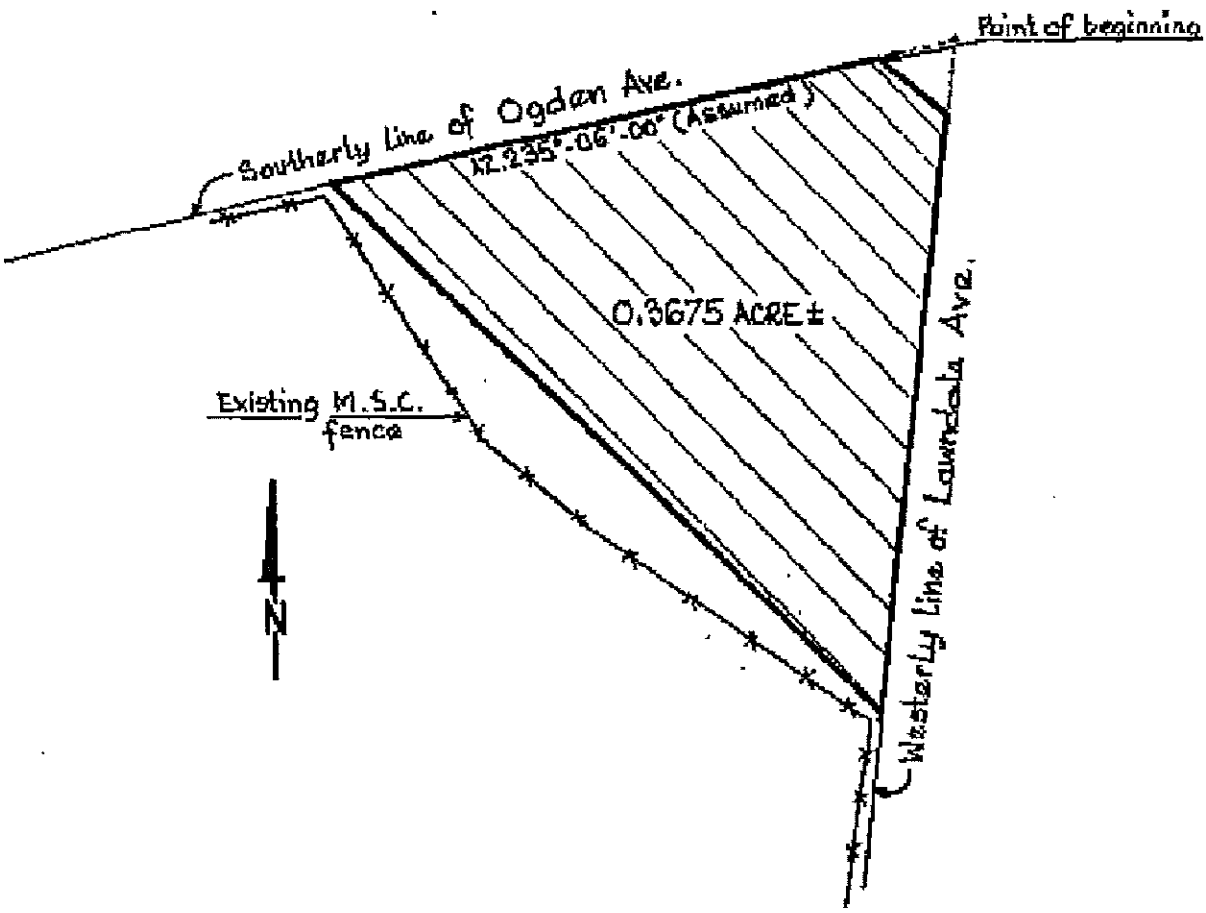
APPENDIX F

LEGAL DESCRIPTION

Date: December 8,1997
Prepared by: L.Musiol

LEGAL DESCRIPTION
of portion M.S.C. parcel code #139

That part of NE quarter of Section 2, Township 38N, Range 12E of the Third Principal Meridian, in Cook County, Illinois bounded and described as follows:
Commencing at the point of intersection of the westerly line of Lawndale Ave. with the southerly line of Ogden Ave., and going westerly with assumed azimuth 235 06'00" for a distance of 20.00 feet to a point of beginning;
thence continue with said azimuth 235 06'00" along westerly line of Lawndale Ave. for a distance of 158.44 feet; thence southeasterly with azimuth 110 34'08" for a distance of 220.66 feet; thence northwesterly with azimuth 341 29'59" for a distance of 169.17 feet; thence northwesterly with azimuth 288 22'01" for a dist. of 23.99 feet to a point of beginning, containing 0.3675 acre, more or less.



APPENDIX H

LYONS ORDINANCE PROHIBITING USE OF POTABLE WELLS

VILLAGE OF LYONS

ORDINANCE NO. 3-17-98-1

AN ORDINANCE AMENDING VILLAGE OF LYONS
ORDINANCE 7-4 DEALING WITH THE VILLAGE
OF LYONS PLUMBING CODE

ADOPTED BY THE PRESIDENT
AND BOARD OF TRUSTEES
OF THE
VILLAGE OF LYONS

THIS 17th DAY OF MARCH, 1998

Published in pamphlet form by the
authority of the President and
Board of Trustees of the Village
of Lyons, Cook County, Illinois
this 17th day of March, 1998

ORDINANCE NO. 3-17-98-1

AN ORDINANCE AMENDING VILLAGE OF LYONS ORDINANCE 7-4 DEALING WITH THE VILLAGE OF LYONS PLUMBING CODE

WHEREAS, State statute makes no provision for water connections; and

WHEREAS, the corporate authorities are allowed to set rules and requirements for the village water system; and

WHEREAS, the Corporate Authorities of the Village of Lyons having the responsibility for the health and safety of its residents have determined that they want to assure a safe supply of potable water.

NOW, THEREFORE, BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF LYONS, COOK COUNTY, ILLINOIS, AS FOLLOWS:

SECTION 1: That Article 7, Chapter 4, Section 2 is added as follow:

"7-4-2: **Potable Water Connection:** Any residential, business or commercial premises in the Village of Lyons wherein any water is used therein, shall be independently and separately connected by a separate service water pipe with a public water main, where there is such water main, adjoining the lot of parcel of land on which such premises stands. No permit shall be issued for the construction of any building in the Village where there is a public water main adjoining such lot or parcel, unless the plans and specifications show connections in compliance with this article. Every premises in existence prior to the construction of a public water main adjacent to the lot or parcel of land on which such premises stands shall, upon the construction of such adjacent public water main be connected to said water main within one (1) year of the time said water main is so constructed and made available for use, provided that if said premises is serviced by a well which ceases to

function properly so that its continued operation constitutes a nuisance or menace to health, said building shall be connected to the adjoining public water main immediately. It shall be unlawful to occupy or use any building or premises in violation of this section."

SECTION 2: Should any section, provision, part or clause of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance as a whole or any part thereof other than the part so declared to be invalid.

SECTION 3: That this ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law.

PASSED THIS 18TH DAY OF MARCH, 1998

AYES: 4

NAYS: 0

ABSENT: (2) Trustees Vrchlatka & Robert

APPROVED THIS 18th DAY OF MARCH, 1998

David A. Visk
Village President

ATTEST:

William J. Polich
William J. Polich, C.M.C.
Village Clerk

APPENDIX F

DAI ATTACHMENTS TO CACR

Material Service Corporation

Environmental Services Department
4226 Lawndale
Lyons, Illinois 60534-1199
312-443-7199
FAX:312-443-7141

October 21, 1999

Mr. Hernando A. Albarracin
Unit Manager
IEPA
LUST Section
1021 North Grand Avenue
P.O. Box 19276
Springfield, IL 62794-9276

RE: LPC #0311715020 - Cook County
Lyons/Material Service Corp.
4226 South Lawndale
LUST Incident #951401
LUST Technical File

Dear Mr. Albarracin:

Enclosed are two copies of the Site Classification/Corrective Action Completion Report for the above referenced site. Also enclosed are two copies of the Site Classification/Corrective Action Budget and Billing Forms for the installation of additional borings and an engineered barrier.

Please issue a "No Further Remediation" letter based on the installation of the engineered barrier and placement of deed restrictions on the site.

Please contact Mark Strack of my staff at 312-443-7108 with any questions.

Sincerely,

Gary W. O'Toole

Gary O'Toole
Manager, Environmental Services

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OCT 2 2 1999
IEPA/BOL

cc- cover only: Kevin Close - Village of Lyons
Mark Strack

RELEASABLE
Reviewer MD Date 8-11-2000

Printed on recycled paper

bcc - cover only: Mike Gaglione
Dave Olson
Ralph Schobert

printed 08/20/2007 4:44PM by eps4431 p. 3/256

BUDGET AND BILLING FORM FOR LEAKING UNDERGROUND STORAGE TANK SITES

A. SITE INFORMATION

Site Name: MATERIAL SERVICE CORPORATION - OGDEN/LAWNDALE SITE

Site Address: 4326 S. Lawndale City: Lyons, IL

Zip: 60534-1199

County: Cook IEPA Generator No.: 0311715020

IEMA Incident No.: 951401 IEMA Notification Date: ILD043908888

Date this Form was Prepared: October 19, 1999

This form is being submitted as a:

____ Budget Proposal

X Budget Amendment (Budget Amendments must include only the costs over the previous budget.)

Amendment Number: 1

____ Billing Package for costs incurred pursuant to 35 Illinois Administrative Code (IAC), Part 732 ("new program").

This form is being submitted for the Site Activities indicated below (check one):

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____ Early Action X Site Classification

____ Low Priority Corrective Action ____ High Priority Corrective Action

X Other (indicate activities) Engineered Barrier

DO NOT SUBMIT "NEW PROGRAM" COSTS AND "OLD PROGRAM" COSTS AT THE SAME TIME, ON THE SAME FORMS.

IEMA No. 951401

If eligible for reimbursement, where should reimbursement checks be sent? Please note that only owners or operators of USTs may be eligible for reimbursement. Therefore, payment can only be made to an owner or operator.

Pay to the order of: MATERIAL SERVICE CORPORATION - YARD 18

Send in care of: MARK STRACK

Address: 4226 S. Lawndale Ave

City: Lyons State: IL Zip: 60534

Number of Petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: X 101 or more: _____

Number of USTs at the site: 9 (Number of USTs includes USTs presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA: 2 for same Incident Number - Ogen/Lawndale Site, Haffner Site

Incident Numbers assigned to the site due to releases from USTs: 951401

Please list all tanks which have ever been located at the site and are presently located at the site.

Product Stored	Size (gallons)	Did UST have a release?		Incident No.	Type of Release
Diesel	2,000	Yes	No	N/A	N/A
Gasoline	12,000	Yes	No	971705	N/A
Gasoline	3,000	Yes	No	951401	Unknown
Gasoline	1,000	Yes	No	951401	Unknown
Gasoline	1,000	Yes	No	951401	Unknown
Diesel	8,000	Yes	No	951401	Unknown
Gasoline	1,000	Yes	No	951401	Unknown
Gasoline	6,000	Yes	No	951401	Unknown
Diesel	8,000	Yes	No	971392	
		Yes	No		

This form must be submitted in duplicate.

IEMA No. 951401

B. PROPOSED BUDGET SUMMARY AND BUDGET TOTAL

1. Investigation Costs: $ 2,300.00
2. Sampling Costs: $ 1,200.00
3. Corrective Action Costs: $ _____
4. Report Preparation Costs: $ 10,390.00
5. Other Costs: $ 26,000.00
6. Handling Charges: $ _____

TOTAL PROPOSED BUDGET = $ 39,890.00

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

D. INVESTIGATION ACTIVITIES

1. **Drilling Costs** - This includes the costs for drilling labor, drill rig usage, collecting samples during drilling operations, field screening of samples, plugging holes, decontamination for all borings, and 55 gallon drums. This includes borings which are to be completed as monitoring wells.

6 borings to 10 feet = 60 feet to be bored
____ borings to ____ feet = ____ feet to be bored
____ borings to ____ feet = ____ feet to be bored
____ borings to ____ feet = ____ feet to be bored

Total Feet to be Bored: 60

Borings: 60 feet X $ 30.00 per foot = $ 1,800.00

Mobilization: $ 500.00

Professional Services (e.g., P.E., geologist) - This only includes professional services which are not included in the drilling costs and/or mobilization costs.:

_____ (Title): ____ hours X $____ per hour = $____

_____ (Title): ____ hours X $____ per hour = $____

_____ (Title): ____ hours X $____ per hour = $____

SUBTOTAL: DRILLING COSTS = $ 2,300

2. **Physical Soil Analysis** - This includes personnel time for sampling, personnel time for sample preparation, containers, packaging, postage and analysis for classification of soil types at the site.

____ Particle Size Analysis samples X $____ per sample = $____

____ Moisture Content samples X $____ per sample = $____

____ Hydraulic Conductivity/Permeability samples X $____ per sample = $____

Indicate the type of testing to be performed: _____

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

_____Soil Classification samples X $_____per sample = $_____

_____Sieve Analysis samples X $_____per sample = $_____

SUBTOTAL: PHYSICAL SOIL ANALYSIS COSTS = $_____

3. **Monitoring Well Installation** - The drilling costs should not be included in this item. Costs included in this item should be costs associated with well casing, well screens, filter pack, annular seal, surface seal, well covers.

a. _____ Wells to _____ feet

Wells: _____ wells X $_____ per well = $_____

b. _____ Wells to _____ feet

Wells: _____ wells X $_____ per well = $_____

c. _____ Wells to _____ feet

Wells: _____ wells X $_____ per well = $_____

d. Well Development (Purging and Surveying): _____ wells X $_____ per well = $_____

Professional Services (e.g., P.E., geologist) - This only includes professional services which are not included in the drilling costs and/or mobilization costs.

_____: _____ hours X $_____ per hour = $_____
(Title)

_____: _____ hours X $_____ per hour = $_____
(Title)

_____: _____ hours X $_____ per hour = $_____
(Title)

_____: _____ hours X $_____ per hour = $_____
(Title)

SUBTOTAL: MONITORING WELL COSTS = $_____

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

4. **Disposal Costs** - This includes the costs for disposing of boring cuttings and any water generated while performing borings or installing wells.

Disposal of Cuttings: _____ drums X $_____ per drum = $_____

Disposal of Water: _____ gallons X $_____ per gallon = $_____

SUBTOTAL: DISPOSAL COSTS = $_____

TOTAL INVESTIGATION COSTS = $ 2,300.00

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

E. SAMPLING

1. **Soil Analysis Costs** - This includes personnel time for sampling, personnel time for sample preparation, containers, packaging, postage and laboratory analysis.

6 BTEX samples X $ 100 per sample = $ 600

6 PNA samples X $ 100 per sample = $ 600

_____ LUST Pollutants samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

SUBTOTAL: SOIL ANALYSIS COSTS = $ 1,200.00

2. **Groundwater Analysis Costs** - This includes personnel time for sampling, personnel time for sample preparation, containers, packaging and postage.

_____ BTEX samples X $_____ per sample = $_____

_____ PNA samples X $_____ per sample = $_____

_____ LUST Pollutants samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

_____ _____ Samples X $_____ per sample = $_____

_____ _____ Samples X $_____ per sample = $_____

SUBTOTAL: GROUNDWATER ANALYSIS COSTS = $ Ø

3. **Well Purging** - Includes personnel and 55 gallon drums.

_____ Wells X $_____ per well = $_____

SUBTOTAL: WELL PURGING COSTS = $_____

4. Disposal of Water: _____ gallons X $_____ per gallon = $_____

SUBTOTAL: WATER DISPOSAL COSTS = $ Ø

TOTAL SAMPLING COSTS = $ 1,200.00

THIS FORM MUST BE SUBMITTED IN DUPLICATE

IEMA No. 951401

G. PERSONNEL

All personnel costs that are not included elsewhere in the budget/billing form must be listed here. Costs must be listed per task, not personnel type. The following are some examples of tasks: Drafting, data collection, plan, report, or budget preparation for site classification activities.

Professional Engineer (Title): 6 hours x $ 125 per hour = $ 750

Task to be performed for the above hours: Drilling, Monitor Well Installation, Well Sampling

Geologist (Title): 40 hours x $ 75 per hour = $ 3000

Task to be performed for the above hours: Drilling

Professional Engineer (Title): 12 hours x $ 125 per hour = $ 1,500

Task to be performed for the above hours: Report Preparation

Geologist (Title): 60 hours x $ 75 per hour = $ 4,500

Task to be performed for the above hours: Report Preparation

Word Processor (Title): 16 hours x $ 40 per hour = $ 640

Task to be performed for the above hours: Report Preparation

(Title): hours x $ per hour = $

Task to be performed for the above hours:

(Title): hours x $ per hour = $

Task to be performed for the above hours:

(Title): hours x $ per hour = $

Task to be performed for the above hours:

This form must be submitted in duplicate.

IEMA No. 951401

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

Task to be performed for the above hours: _____

_____: _____ hours x $_____ per hour = $_____
(Title)

TOTAL PERSONNEL COSTS: $ 10,390.00

This form must be submitted in duplicate.

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IEMA No. 951401

H. EQUIPMENT COSTS

All equipment used must be listed below in a time and materials format. Handling charges should not be added here; use Section J.

Equipment	Own or Rent?	Time Used	Unit Rate	Total Cost/Item
Steam Cleaner	Rent	2 Days	$200/day	$400

IEMA No. 951401

Subtotal Page H-1 _____

Equipment	Own or Rent?	Time Used	Unit Rate	Total Cost/Item

Subtotal Page H-2 0

Total (Pages H-1 and H-2) $400

This form must be submitted in duplicate.

IEMA No. 951401

H. Other Costs – A listing and description of all other costs which will be/were incurred and are not specifically listed on this form should be attached. The listing should include a cost breakdown in the format used above.

TOTAL OTHER COSTS = $ 20,000.00

1. Installation of a 2" asphalt Engineered Barrier over areas identified on Figure #3 of the Report = $20,000.00

2. Abandonment of 4 monitoring wells = $6,000.00

THIS FORM MUST BE SUBMITTED IN TRIPLICATE

IEMA No. 951401

J. JUSTIFICATION FOR BUDGET AMENDMENTS

If this form is being submitted as an amendment, you must submit a narrative justifying the need for the amendment. If the amendment includes a revision in a corrective action proposal, a new proposal must be submitted.

Additional soil borings necessary to define the plume and the construction of an Engineered Barrier.

THIS FORM MUST BE SUBMITTED IN TRIPLICATE

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DAI ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 847.498.6910
Fax 847.498.6911

One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062-1588

SITE CLASSIFICATION COMPLETION REPORT / CORRECTIVE ACTION COMPLETION REPORT LYONS/MATERIAL SERVICE CORPORATION 4226 SOUTH LAWNDALE AVENUE LYONS, ILLINOIS 0311715020 – COOK COUNTY

July 29, 1999

Prepared For:
Material Service Corporation
4226 Lawndale Avenue
Lyons, Illinois 60534

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OCT 2 2 1999
IEPA/BOL

Prepared By:

DAI Environmental, Inc.
One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062

Chicago • Tempe • Los Angeles
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Reviewer MD Date 01-1-2000

TABLE OF CONTENTS

FIGURES ii
TABLES ii
APPENDICES iii
IEPA LEAKING UNDERGROUND STORAGE TANK PROGRAM FORMS iv

1.0 INTRODUCTION 1

2.0 ATTACHMENT TO SITE CLASSIFICATION COMPLETION REPORT 2
J. CLASSIFICATION BY EXPOSURE PATHWAY EXCLUSION 2
J.1. Extent of contamination exceeding Tier 1 objectives 2
J.2. Physical Soil Characteristics 16
J.2.a. Soil Attenuation Capacity 16
J.2.b. Soil Saturation Limit 17
J.2.c. Characteristic of Reactivity 17
J.2.d. The pH of the Soils 18
J.2.e. Characteristic of Toxicity 18
J.3. Inhalation Exposure Route 18
J.4. Ingestion Exposure Route 18
J.5. Groundwater Ingestion Exposure Route 20
K. SUPPORTING DOCUMENTATION 22
K.1. A Site Map to Scale and Oriented North 22
K.2. A Horizontal Cross Section Showing the Various Geologic Units 22
K.3. Laboratory Certifications 22

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT 22
C. COMPLETION INFORMATION 22
C.1. Chronological Narrative 22
C.2. Remediation of "High Priority" Threats 27
C.3. Elimination of "High Priority" Threats through Exposure Pathway Exclusion 27
C.4. Discussion of Cleanup Objective Determination 27
C.5. Media Sampling and Analytical Procedures 28
C.5.1. Soil Boring Procedures 28
C.5.2. Soil Classification Procedures 29
C.5.3. Headspace Vapor Analysis 29
C.5.4. Analysis of Soil Samples 29
C.5.5. Static Water Level Measurements 30
C.5.6. Rising Head Hydraulic Conductivity Testing 32
C.6. Analytical Results and Cleanup Objectives in Tabular Format 33
C.7. Laboratory Reports 33
C.8. Soil Boring Logs 33

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C.9. Soil Boring Logs 33
C.10. Laboratory Certification 33
C.11. Professional Engineer Certification 33
C.12. Site Maps 33
C.13. A Legal Description of the site and Plat of Survey 33
C.14. The real estate tax index/parcel index number 35
C.15. Photographs Documenting Corrective Action Activities 35

4.0 SUMMARY AND REQUEST FOR NFR 35

LIST OF FIGURES

Figure 1. Soil Boring and Monitoring Well Locations 3
Figure 2. Locations of Tier 1 SRO Exceedances 14
Figure 3. Areas Requiring an Engineered Barrier 19
Figure 4. Site Plan Showing Location of Former USTs and Associated Piping 23
Figure 5. Reproduction of the Site Map Showing a 200-ft Radius from the *Site Classification Workplan* 24
Figure 6. Location of the Geological Cross Section A - A' 25
Figure 7. Geological Cross Section A - A' 26
Figure 8. Potentiometric Surface (April 27, 1999) 31
Figure 9. Soil Boring and Monitoring Well Locations, Extent of Contamination, and Area Requiring an Engineered Barrier 34
Figure C-1. R-26 Modeled Extent of Contamination ..... Appendix C, Attachment B

LIST OF TABLES

Table 1. Prior Chemical Analysis of Soil Samples 4
Table 2. Chemical Analysis of Soil Samples 5
Table 3. Summary of Soil Sample Analysis Results for Miscellaneous Parameters 10
Table 4. Summary of Groundwater Sampling and Analysis Results 11
Table 5. Tier 1 SRO Exceedances 13
Table 6. Tier 1 SRO Exceedances for the Ingestion and Inhalation Exposure Pathways 16
Table 7. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit 17
Table 8. Lead Concentration at MW-3 and Calculated Tier 2 GRO 20
Table 9. Tier 2 SROs and Maximum Observed Contaminant Concentrations 21
Table 10. Observed TCLP Concentration at SB-14 and Calculated C(x) 22
Table 11. Summary of Estimated Hydraulic Conductivities 32
Table C-1. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit C-1

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APPENDICES

LABORATORY REPORTS ..... APPENDIX A
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION ..... APPENDIX B
GROUNDWATER INGESTION
PATHWAY EXCLUSION DEMONSTRATION ..... APPENDIX C
LEAD FATE AND TRANSPORT MODELING ..... APPENDIX D
VOCs AND PNAs FATE AND TRANSPORT MODELING ..... APPENDIX E
LABORATORY CERTIFICATIONS ..... APPENDIX F
SOIL BORING AND MONITORING WELL LOGS ..... APPENDIX G
SLUG TEST ANALYSIS ..... APPENDIX H
PROFESSIONAL ENGINEER CERTIFICATION ..... APPENDIX I
PLAT OF SURVEY AND LEGAL DESCRIPTION ..... APPENDIX J

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The Agency is authorized to require this information under Sections 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/37 - 5/17). Failure to disclose this information may result in a civil penalty of not to exceed $10,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any bill, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/37 17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Site Classification Completion Report

A. Site Identification

IEMA Incident # (6 digit): 951401 IEPA Generator # (10 digit): 0311715020

Site Name: Material Service Corporation - Yard 18 (Ogden & Lawndale)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook

B. Site Information

1. Is this an amended report? Yes___ No X

2. Has a Site Classification Work Plan been approved? Yes X No___
   Date of approval letter: December 2, 1998

C. Site Classification Summary

1. This site is classified as:

NO FURTHER ACTION	___	(applies to methods 1, 2 and pathway exclusion)
LOW PRIORITY	___	(applies to methods 1 and 2 only)
HIGH PRIORITY	X	(applies to methods 1, 2 and pathway exclusion)

2. The method of site classification used was:

Method 1	___	
Method 2	___	
Exposure Pathway Exclusion	X	(proceed to Section J)

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D. Site Classification by Methods 1 or 2

1. Is the UST(s) system located within the minimum or maximum setback zone or regulated recharge area of a potable water supply well? Yes___ No___

2. After completing Early Action measures, is there evidence that through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or could cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces present or in the past? Yes___ No___

3. Is Class III Special Resource Groundwater located within 200 feet of the excavation? Yes___ No___

4. After completing Early Action measures, has a surface body of water been adversely affected (i.e. visible sheen, free product layer) by a release from an UST system? Yes___ No___

5. Has a groundwater quality standard or groundwater objective for any applicable indicator contaminant been exceeded at the property boundary line or 200 feet from the UST excavation, whichever is less? Yes___ No___

6. If Method One was chosen, indicate the rating, as described in the Illinois State Geological Survey Circular 532, with which the actual site geology is consistent. _____

7. If Method Two was chosen, answer the following questions regarding the first 15 feet of native material (below the invert elevation of the UST):

   a. Did the material contain unconsolidated sand, gravel, and/or sand and gravel that is 5 feet or more in thickness with 12 percent or less fines? Yes___ No___
   b. Did the material contain sandstone 10 feet or more in thickness, or fractured carbonate 15 feet or more in thickness? Yes___ No___
   c. Is the material capable of the following:

      i. sustaining a groundwater yield, from a 12 inch borehole, of 150 gallons per day or more from a thickness of 15 feet or less? Yes___ No___
      ii. does the material have a hydraulic conductivity of 1×10^{-4} cm/sec or greater? Yes___ No___

E. *Site Evaluation*

1. Physical Soil Classification:

   Provide the following:

   a. Soil borings

      1. A list of publications reviewed and preliminary conclusions concerning the site geology;
      2. Soil boring logs;
      3. A site map to scale and oriented north showing:

         a. Soil boring locations;
         b. UST system(s);
         c. 200 foot radius from UST system;
         d. Property boundaries.

   b. Method 1 soil properties test results (include calculations, methodologies, and complete laboratory reports)

      1. Soil particle analysis;

2. Soil moisture content;
3. Soil classification;
4. Unconfined compression test;
5. In-situ hydraulic conductivity; OR
6. Ex-situ hydraulic conductivity.

c. Method 2 soil properties test results (include calculations, methodologies, and complete laboratory reports)

1. Soil particle analysis;
2. Ex-situ hydraulic conductivity; OR
3. In-situ hydraulic conductivity and yield of geologic material.

2. Groundwater Investigation

Provide the following:

a. A discussion of how the monitoring well configuration provides the greatest likelihood of detecting migration of groundwater contamination;
b. Monitoring well construction diagrams;
c. A table showing static water elevations;
d. Sample collection shipment and preservation information;
e. Completed chain-of-custody form(s);
f. Copies of laboratory reports (include field and lab blanks);
g. Analytical results in tabular format;
h. A site map to scale and oriented north showing:

i. Monitoring well locations;
ii. Potentiometric surface map;
iii. Groundwater flow direction;
iv. 200 foot radius from UST system;
v. Property boundaries.

F. Water Well Survey

Provide the following:

1. The results of the survey conducted to identify all community water supply wells within 2,500 feet of the UST system and all potable water supply wells within 200 feet of the UST system (include copies of well logs and all correspondence to and from the Illinois State Water Survey and the Illinois State Geological Survey).

2. The local units of government contacted to determine if there is a local ordinance or policy regulating the usage of potable water supply wells.

3. A site map to scale showing all of the community water supply wells within 2,500 feet of the UST system and all potable water supply wells within 1,000 feet of the UST system (radii of 200, 400, 1,000 and 2,500 feet from the UST system should be marked on the map).

4. A table indicating the setback zone for each community or potable water supply well and the distance from the UST system to the well (the location of each well must be identified on the map by numbers corresponding to information provided in the table).

5. The sources consulted in determining whether the UST system is within the regulated recharge area of any community or potable water supply well.

G. Migration Pathways

Provide the following:

1. A discussion of the investigation conducted to identify all potential natural and man-made migration pathways that are on the site, rights-of-way attached to the site, or in any area surrounding the site that may be adversely affected as a result of a release of petroleum from the UST system.

2. A discussion of further investigations conducted to determine if there is evidence that migration of petroleum or vapors along such pathways threatens human health or the environment or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces.

3 A discussion of the findings based on the investigations performed.

4. A site map to scale and oriented north showing:

   a. The UST system(s) and excavation;
   b. Product and dispenser lines;
   c. Potential natural and man-made pathways on-site, in rights-of-way attached to the site or in areas that may be adversely affected by the release;
   d. Soil boring locations;
   e. Property boundaries.

H. Class III Special Resource Groundwater

Provide the following:

1. A discussion of the steps taken to determine if Class III groundwater exists within 200 feet of the site.

2. A site map to scale and oriented north showing:

   a. Location of Class III groundwater;
   b. Radius of 200 feet from the UST system(s).

I. **Surface Bodies of Water**

Provide the following:

1. A discussion of the steps taken to locate all surface bodies of water on site and within 100 feet of the site, and once located, the steps taken to determine if they have been adversely affected by the presence of a sheen or free product layer resulting from a release of petroleum from the UST system.

2. A site map to scale and oriented north showing the locations of the surface bodies of water on site and within 100 feet of the site.

J. **Classification by Exposure Pathway Exclusion** See Attached Narrative Report

1. Extent of contamination exceeding Tier 1 objectives

Provide the following:

a. A table showing the analytical results and depth of samples;
b. A site map showing the soil sample location points and groundwater monitoring well locations;
c. A site map showing the extent of soil and/or groundwater contamination exceeding Tier objectives;
d. A cross-section of the site showing the areas of soil contamination exceeding Tier 1 objectives;

2. Physical soil characteristics

Provide the results of the tests performed to determine the following:

a. Whether or not the concentration of any organic contaminants exceeded the attenuation capacity of the soil.
b. Whether or not the organic contaminants exceeded the soil saturation limit.
c. Whether or not the soils exhibited any characteristics of reactivity for hazardous waste.
d. The pH of the soils.
e. Whether or not contaminated soils exhibited any characteristics of toxicity for hazardous waste.

3. Inhalation exposure route

Demonstrate the following:

a. An institutional control is in place that requires safety precautions for construction worker populations and compliance with (b) below.
b. That any contaminant of concern within ten (10) feet of the land surface or within ten (10) feet of any man-made pathway does not exceed Tier 1 cleanup objective or that an Agency-approved engineered barrier is in place.

4. Ingestion exposure route

   Demonstrate the following:

   a. An institutional control is in place that requires safety precautions for construction worker populations and compliance with (b) below.
   b. That any contaminant of concern within three (3) feet of the land surface does not exceed the Tier 1 cleanup objectives or an Agency-approved engineer barrier is in place.

5. Groundwater ingestion exposure route

   Demonstrate the following:

   a. The source of the release is not located within the minimum or maximum setback zone or regulated recharge area of a potable water supply well.
   b. Any area within 2,500 feet from the source of the release is restricted under a local ordinance which prohibits the use of groundwater as a potable supply.
   c. The concentration of any contaminant of concern in groundwater within the minimum or maximum setback zone of a potable water supply well will meet the applicable Tier 1 cleanup objective.
   d. The concentration of any contaminant of concern in groundwater discharging into a surface water will meet the applicable surface water quality standard per 35 IAC Section 302.

K. Supporting Documentation See Attached Narrative Report

Provide the following:

1. A site map to scale and oriented north showing:

   a. UST system(s) and excavation;
   b. Product and dispenser lines;
   c. Pumps and islands;
   d. Underground utilities (sewer, gas, water, etc.);
   e. Nearby structures (buildings, roads, etc.);
   f. Location of the soil boring(s);
   g. Location of the monitoring wells;
   h. Property boundaries;
   i. 200 foot radius from the UST System(s).

2. A horizontal cross section showing the various geologic units and the depth to groundwater.

3. Laboratory Certification(s).

L. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner	Operator
Name: Material Service Corporation	Name:
Contact ~~Title~~: Mr. Gary O'Toole	Title:
Address: 4225 South Lawndale Avenue	Address:
Lyons, Illinois 60534	
Phone: (312) 443-7108	Phone:
Signature: Gary O'Toole	Signature:
Date: 8-31-99	Date:

Consultant

Firm: DAI Environmental, Inc.

Contact: Richard J. Vamos Ph.D., P.E.

Title: Vice President

Address: One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062

Phone: (847) 498-6910

Signature: Richard J. Vamos

Date: 7/29/99

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M. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. I also certify under penalty of law that the classification for this site is ☐ No Further Action ☐ Low Priority ☒ High Priority and that this classification satisfies all the requirements of 35 Illinois Administrative Code Part 732, Subpart C. In addition, I certify that there ☐ is ☒ is no evidence that, through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Professional Engineer

Name: Richard J. Vamos Ph.D., P.E.

Firm: DAI Environmental, Inc.
One Northbrook Place

Address: 5 Revere Drive, Suite 310
Northbrook, Illinois 60062

Phone: (847) 498-6910

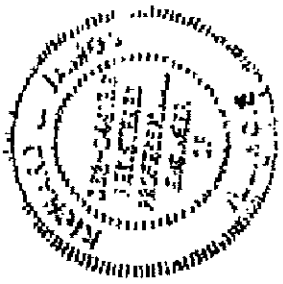
Ill. Registration No.: 0062-049139

License Expiration Date: 11/30/99

Signature: Richard J. Vamos

Date: 7/29/99

P. E. Seal



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Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Corrective Action Completion Report

A. Site Identification

IEMA Incident # (6 digit): 951401 IEPA Generator # (10 digit): 0311715020

Site Name: Material Service Corporation - Yard 18 (Ogden & Lawndale)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook

B. Site Information

1. Is this an amended report? Yes___ No X

2. Has a High Priority Corrective Action Plan been approved? Yes___ No X
   Date of approval letter: _____

3. This completion report is being submitted pursuant to:

   a. 35 Ill. Adm. Code 731.166 ____

   b. 35 Ill. Adm. Code 732.300(b) ____

   c. 35 Ill. Adm. Code 732.400(b) ____

   d. 35 Ill. Adm. Code 732.400(c) ____

   e. 35 Ill. Adm. Code 732.409(a)(2)(b) X

4. Method of remediation chosen:

   a. Soil Excavation and Exposure Pathway Exclusion

   b. Groundwater Exposure Pathway Exclusion

5. Quantity of contaminated media remediated/recovered:

   a. Soil 330 yds.^{3}

   b. Groundwater N/A gals.

   c. Free Product N/A gals.

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C. Completion Information

Provide the following:

1. A chronological narrative of corrective action activities;
2. An explanation of how the corrective action activities remediated each of the threats which caused the site to be classified "High Priority";
3. An explanation of how corrective action addressed the exposure pathway that caused the site to be classified "High-Priority";
4. A discussion of how the cleanup objectives were determined;
5. Media sampling and analytical procedures to verify completion of remediation;
6. The analytical results and cleanup objectives in tabular format;
7. Laboratory reports;
8. Soil boring logs;
9. Monitoring well logs;
10. Laboratory Certification;
11. Applicable Professional Engineer Certification;
12. Site maps to scale and oriented north showing the:

    a. Final soil sample locations demonstrating completion of remediation;
    b. Groundwater monitoring well locations;
    c. Groundwater recovery/discharge points;
    d. Plume of contamination as defined by laboratory analyses;
    e. Area remediated.

13. A legal description of the site or a reference to a plat showing the site boundaries.

14. The real estate tax index/parcel index number.

15. Photographs documenting corrective action activities.

D. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner	Operator
Name: Material Service Corporation	Name: N/A
~~Title:~~ Contact: Mr. Gary O'Toole	Title:
Address: 4226 South Lawndale Avenue	Address:
Lyons, Illinois 60534	
Phone: (312) 443-7108	Phone:

Signature: Gary O'Toole Signature: _____

Date: 8-3-99 Date: _____

Consultant

Firm: DAI Environmental, Inc.

Contact: Richard J. Vamos Ph.D., P.E.

Title: Vice President

Address: One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062

Phone: (847) 498-6910

Signature: [signature]

Date: 7/29/99

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ATTACHMENTS TO
SITE CLASSIFICATION COMPLETION REPORT / CORRECTIVE ACTION COMPLETION REPORT
LYONS/MATERIAL SERVICE CORPORATION
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS
0311715020 – COOK COUNTY

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1.0 INTRODUCTION

This document is an attachment to the *Site Classification / Corrective Action Completion Report* prepared by DAI Environmental, Inc. (DAI) and submitted to the Illinois Environmental Protection Agency (IEPA) on behalf of Material Service Corporation (MSC), regarding IEMA Incident No. 951401, located at 4226 South Lawndale Avenue in Lyons, Illinois. This attachment provides the information required under Sections I and K of the *Site Classification Completion Report* and Section C of the *Corrective Action Completion Report*. All other information is included directly on the above-referenced report forms.

Material Service Corporation (MSC) owns the property located at 4226 South Lawndale Avenue in Lyons, Illinois. MSC has engaged DAI Environmental, Inc. (DAI) to pursue a risk-based closure of subsurface contamination issues resulting from the prior operations of a gasoline filling station at the site in accordance with Part 742 of Title 35 of the Illinois Administrative Code (IAC); otherwise known as the Tiered Approach to Corrective Action Objectives (TACO).

On June 27, 1995, five (5) underground storage tanks (USTs) were removed from the Ogden and Lawndale location in the presence of a representative from the Lyons Fire Department. Please note, an 8,000-gallon UST was removed from what is referred to in prior reports as the Haffner location. This Haffner location is located approximately 2500-feet from the Ogden and Lawndale location. The Haffner location is therefore considered distinct and separate, and is not part of this *Site Classification / Corrective Action Completion Report*.

During the removal activities at the Ogden and Lawndale location (property), it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. The Illinois Emergency Management Agency (IEMA) was immediately notified of the suspected release, and the IEMA Incident Number 951401 was assigned. A *Corrective Action Completion Report*, dated March 10, 1998, summarizing the UST removal activities and the results of a March 1995 Phase II investigation was submitted to the IEPA. Based upon the information contained in that report, a "No Further Remediation" letter was requested from the IEPA. In a letter dated April 9, 1998, the IEPA

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rejected the request on the basis that the extent of soil and groundwater contamination had not been fully investigated/delineated. A *Site Classification Workplan and Budget*, dated August 3, 1998, was submitted for agency approval to comply with the IEPA's request for further investigation. On December 2, 1998, the IEPA approved this workplan pending four (4) modifications.

This document has been prepared to assist in the review of the *Site Classification / Corrective Action Completion Report* by following the organizational format of the Illinois Environmental Protection Agency (IEPA) Leaking Underground Storage Tank (LUST) Program forms. Each section of this document is headed by one of the question statements in the forms, set in ***bold italics***, and keyed to its respective section.

2.0 ATTACHMENT TO SITE CLASSIFICATION COMPLETION REPORT

J. CLASSIFICATION BY EXPOSURE PATHWAY EXCLUSION

J.1. Extent of contamination exceeding Tier 1 objectives

During a Phase II Site Assessment, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11), on March 14, 1995. Pursuant to the IEPA approved workplan, fifteen (15) soil borings (SB-1 through SB-15) were drilled under the supervision of DAI. On February 1, 1999, soil samples were collected from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected from borings SB-10 through SB-15. Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. Both soil and groundwater samples were submitted to an independent analytical laboratory for chemical and physical analysis. The results of these analyses are summarized below in Tables 1 through 4. Complete copies of the laboratory reports for DAI's portion of the subsurface investigation are provided in Appendix A. Figure 1 is a site plan showing the soil boring and groundwater monitoring well locations.

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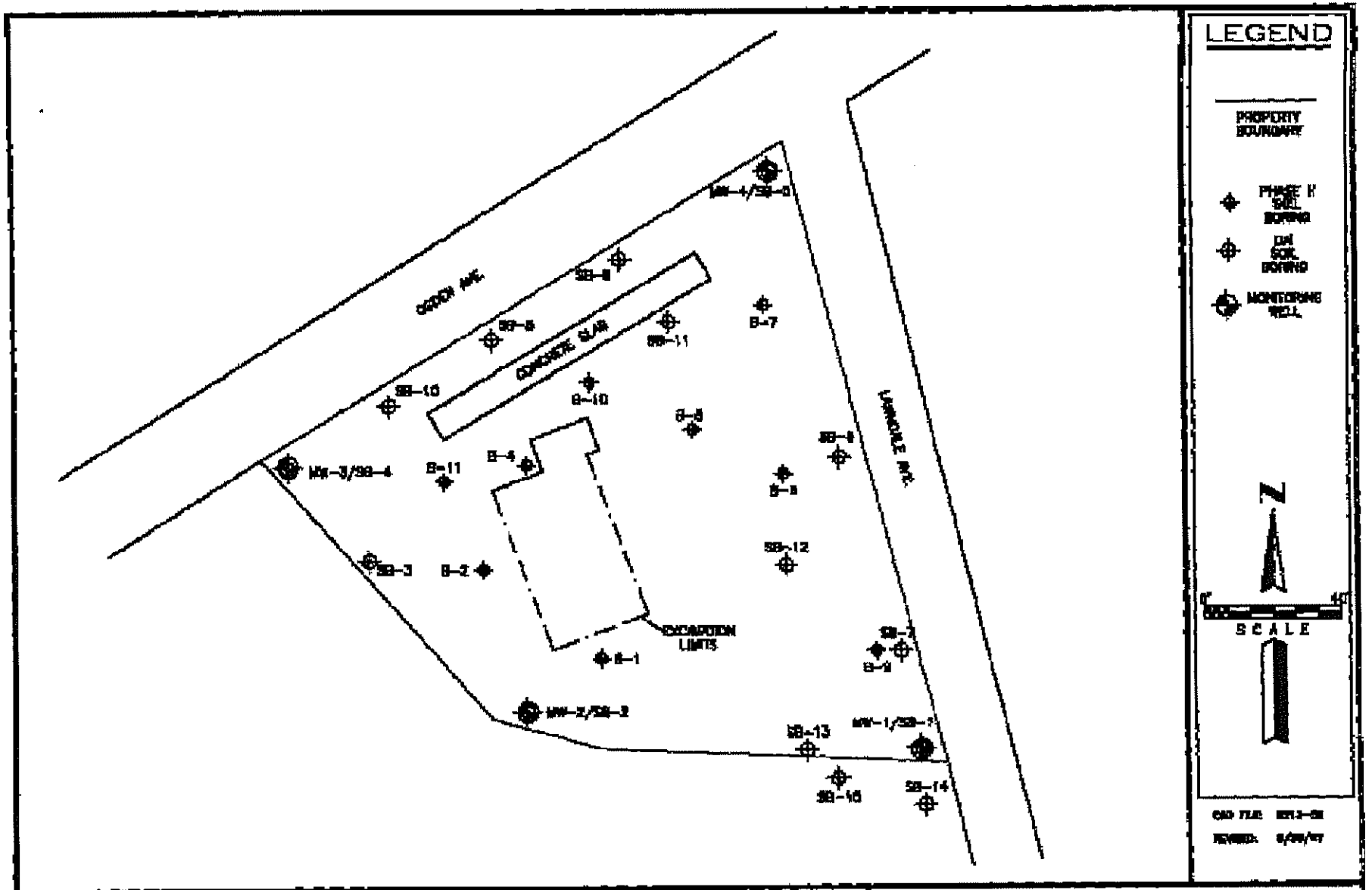

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MSC YARD 16
4226 SOUTH LAWNDALE AVE.
LYONS, IL

FIGURE 1
SOIL BORING AND
MONITORING WELL LOCATIONS

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Table 1. Prior Chemical Analysis of Soil Samples (mg/Kg)
PNAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Compound	Sample ID (Depth)									Tier 1 SRO
	B-1 (4'-4.8')	B-2 (8.7'-9.3')	B-4 (6'-6.7')	B-5B (7.5'-9.0')	B-6 (6'-6.4')	B-7 (5.2'-6.5')	B-9 (4.5'-5.2')	B-10 (6.7'-7.4')	B-11 (6.1'-7.0')	
Naphthalene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	84[1]
Acenaphthene	<0.660	1.130	0.980	2.200	<0.660	<0.660	<0.660	<0.660	<0.660	370[1]
Anthracene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	12,000[1]
Fluoranthene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	4,300[1]
Fluorene	<0.140	0.644	<0.140	0.244	<0.140	<0.140	0.226	<0.140	<0.140	560[1]
Pyrene	0.274	<0.180	<0.180	<0.180	<0.180	<0.180	1.780	<0.180	<0.180	4,200[1]
Acenaphthylene	<0.660	2.840	2.450	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	N/A
Benzo(ghi)perylene	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	0.479	<0.0509	<0.0509	N/A
Phenanthrene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	N/A
Benzo(a)anthracene	0.0302	<0.00871	<0.00871	<0.00871	0.025	<0.00871	0.213	<0.00871	<0.00871	2[1]
Benzo(a)pyrene	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	0.434	<0.0154	<0.0154	0.8[2]
Benzo(b)fluoranthene	0.0747	0.0381	0.0421	<0.0121	0.0947	<0.0121	0.618	0.0507	<0.0121	5[1]
Benzo(k)fluoranthene	0.0156	<0.0114	<0.0114	<0.0114	0.0527	<0.0114	0.596	<0.0114	<0.0114	49[2]
Chrysene	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.970	<0.100	<0.100	160[1]
Dibenzo(a,h)anthracene	0.0375	<0.0201	0.0370	<0.0201	0.0955	<0.0201	1.550	<0.0201	<0.0201	0.8[2]
Indeno(1,2,3-cd)pyrene	<0.0288	<0.0288	<0.0288	<0.0288	0.0326	<0.0288	0.491	<0.0288	<0.0288	8[1]
Benzene	<0.002	1.300	1.540	<0.200	<0.002	<0.002	<0.002	0.0863	<0.002	0.03[1]
Toluene	0.0047	0.338	3.370	<0.200	<0.002	<0.002	<0.002	<0.002	<0.002	12[1]
Ethyl Benzene	0.00218	1.650	3.920	15.100	<0.002	<0.002	0.00518	<0.002	<0.002	13[1]
Xylenes (total)	0.00836	4.120	18.370	37.600	<0.0061	<0.006	0.02352	<0.00892	<0.006	150[1]

Bold - indicates an exceedence of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

Table 2. Chemical Analysis of Soil Samples (mg/Kg)
PNAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Compound	Sample ID (Depth)								Tier 1 SRO
	SB1-1 (0'-2')	SB1-2 (4'-6')	SB1-3 (8'-10')	SB2-1 (0'-2')	SB2-2 (4'-6')	SB3-1 (0'-2')	SB3-2 (4'-6')	SB3-3 (8'-10')	
Naphthalene	<0.032	<0.028	<0.037	<0.028	<0.028	<0.028	<0.030	<0.037	84[1]
Acenaphthene	<0.053	<0.047	<0.062	<0.048	<0.048	<0.047	<0.050	<0.063	570[1]
Anthracene	<0.0412	<0.0368	0.356	<0.0370	<0.0370	<0.0364	<0.0389	<0.0489	12,000[1]
Fluoranthene	0.112	0.0734	2.62	<0.0313	<0.0313	<0.0308	<0.0330	<0.0414	4,300[1]
Fluorene	<0.0633	<0.0620	<0.0815	<0.0623	<0.0623	<0.0613	<0.0656	<0.0823	560[1]
Pyrene	0.158	0.0791	2.99	<0.0608	<0.0608	<0.0598	<0.0640	<0.0804	4,200[1]
Acenaphthylene	<0.0790	<0.0707	<0.0929	<0.0711	<0.0711	<0.0699	<0.0748	<0.0939	N/A
Benzo(ghi)perylene	0.178	0.129	1.81	<0.0305	<0.0305	<0.0300	<0.0321	<0.0403	N/A
Phenanthrene	<0.0378	<0.0338	0.695	<0.0339	<0.0339	<0.0334	<0.0357	<0.0448	N/A
Benzo(a)anthracene	0.0821	0.0418	1.47	<0.0030	<0.0030	<0.0029	<0.0031	<0.0039	2[2]
Benzo(a)pyrene	0.143	0.0998	1.62	<0.005	<0.005	<0.004	<0.005	<0.006	0.8[2]
Benzo(b)fluoranthene	0.159	0.0859	1.69	<0.0041	<0.0041	<0.0040	<0.0043	<0.0054	5[1]
Benzo(k)fluoranthene	0.112	0.0689	1.24	<0.0038	<0.0038	<0.0038	<0.0041	<0.0051	49[1]
Chrysene	0.0755	0.0395	1.04	<0.003	<0.003	<0.003	<0.004	<0.004	160[1]
Dibenzo(a,h)anthracene	0.247	0.188	1.95	<0.007	<0.007	<0.007	<0.007	<0.009	0.8[2]
Indeno(1,2,3-cd)pyrene	0.562	0.643	1.13	<0.0098	<0.0098	<0.0096	<0.0103	<0.0129	8[1]
Benzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	0.03[1]
Toluene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	12[1]
Ethyl Benzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	13[1]
Xylenes (total)	<0.0126	0.094	<0.0148	<0.0114	0.0527	<0.0112	<0.0119	<0.0150	150[1]

Bold - indicates an exceedence of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

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Table 2. (continued) Chemical Analysis of Soil Samples (mg/Kg)
PNAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Compound	Sample ID (Depth)								Tier 1 SRO
	SB4-1 (0'-2')	SB4-2 (4'-6')	SB4-3 (8'-10')	SB5-1 (0'-2')	SB5-2 (4'-6')	SB5-3 (8'-10')	SB6-1 (0'-2')	SB6-2 (4'-6')	
Naphthalene	<0.037	<0.029	<0.029	<0.030	<0.030	<0.029	<0.028	<0.030	84[1]
Acenaphthene	<0.062	<0.048	<0.049	<0.050	<0.050	<0.049	<0.047	<0.051	570[1]
Anthracene	<0.0481	<0.0374	<0.0380	<0.0391	<0.0388	<0.0384	1.74	2.24	12,000[1]
Fluoranthene	<0.0407	<0.0317	<0.0322	<0.0331	<0.0328	<0.0325	8.80	12.0	4,300[1]
Fluorene	<0.0810	<0.0630	<0.0640	<0.0658	<0.0653	<0.0646	<0.0611	<0.0665	560[1]
Pyrene	<0.0791	<0.0615	<0.0625	<0.0643	<0.0637	<0.0631	8.21	11.1	4,200[1]
Acenaphthylene	<0.0923	<0.0719	<0.0730	<0.0751	<0.0744	<0.0736	<0.0697	<0.0759	N/A
Benzo(ghi)perylene	<0.0397	<0.0309	<0.0314	<0.0323	<0.0320	<0.0316	1.25	1.84	N/A
Phenanthrene	<0.0441	<0.0343	<0.0348	<0.0359	<0.0356	<0.0352	4.58	6.17	N/A
Benzo(a)anthracene	<0.0038	<0.0030	<0.0030	<0.0031	<0.0031	<0.0031	3.56	4.80	2[1]
Benzo(a)pyrene	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	2.26	2.71	0.8[2]
Benzo(b)fluoranthene	<0.0053	<0.0041	<0.0042	<0.0043	<0.0043	<0.0042	2.60	3.25	5[1]
Benzo(k)fluoranthene	<0.0050	<0.0039	<0.0040	<0.0041	<0.0040	<0.0040	1.72	2.16	49[1]
Chrysene	<0.004	<0.003	<0.003	<0.004	<0.004	<0.004	2.46	3.18	160[1]
Dibenzo(a,h)anthracene	<0.009	<0.007	<0.007	<0.007	<0.007	<0.007	1.79	2.74	0.8[2]
Indeno(1,2,3-cd)pyrene	<0.0127	<0.0099	<0.0100	<0.0103	<0.0102	<0.0101	12.50	13.9	8[1]
Benzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	0.03[1]
Toluene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	12[1]
Ethyl Benzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	13[1]
Xylenes (total)	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	150[1]

Bold - indicates an exceedance of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

Table 1. (continued) Chemical Analysis of Soil Samples (mg/Kg)
PHAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Compound	Sample ID (Depth)								Tier 1 SRO
	SB7-1 (0'-2')	SB7-2 (4'-6')	SB8-1 (0'-2')	SB8-2 (4'-6')	SB8-3 (8'-10')	SB9-1 (0'-2')	SB9-2 (4'-6')	SB9-3 (8'-10')	
Naphthalene	<0.032	<0.029	<0.028	<0.031	<0.030	0.328	0.514	<0.030	84[1]
Acenaphthene	<0.054	<0.046	<0.047	<0.051	<0.052	0.158	0.646	<0.050	570[1]
Anthracene	0.0449	<0.0375	<0.0366	0.0674	0.206	<0.0378	0.0368	<0.0389	12,000[1]
Fluoranthene	0.247	0.0771	<0.0310	0.243	0.362	<0.0320	0.786	0.080	4,300[1]
Fluorene	<0.0704	<0.0532	<0.0617	<0.0673	<0.0666	<0.0637	0.445	<0.0656	560[1]
Pyrene	0.295	0.104	<0.0602	0.235	0.515	<0.0622	0.559	0.093	4,200[1]
Acenaphthylene	<0.0803	<0.0720	<0.0703	<0.0767	<0.0760	0.281	0.632	<0.0748	N/A
Benzo(ghi)perylene	0.229	0.119	<0.0302	0.0895	0.187	<0.0312	0.423	0.116	N/A
Phenanthrene	0.196	<0.0344	<0.0336	0.126	0.476	<0.0347	0.371	<0.0357	N/A
Benzo(a)anthracene	0.150	0.0552	0.0567	0.102	0.411	0.0209	0.418	0.0514	2[1]
Benzo(a)pyrene	0.154	0.120	0.0056	0.0907	0.275	0.0220	0.246	0.0836	0.2[2]
Benzo(b)fluoranthene	0.160	0.0967	0.0056	0.0958	0.359	0.0174	0.297	0.0836	5[1]
Benzo(k)fluoranthene	0.206	0.0690	0.0056	0.0650	0.205	0.0128	0.355	0.0645	49[1]
Chrysene	0.0872	0.0518	0.0067	0.0723	0.312	0.0139	0.141	0.0642	160[1]
Dibenzo(a,h)anthracene	0.323	0.199	<0.007	0.119	0.216	0.0081	1.35	0.143	0.2[2]
Indeno(1,2,3-cd)pyrene	0.837	0.429	<0.0097	0.567	1.73	0.0350	1.50	0.594	5[1]
Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.438	1.510	5.930	0.03[1]
Toluene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.087	0.356	<0.0119	32[1]
Ethyl Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.287	7.870	1.010	13[1]
Xylenes (total)	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.195	6.640	2.320	150[1]

Bold – indicates an exceedance of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

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Table 2. (continued) Chemical Analysis of Soil Samples (mg/Kg)
PNAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Component	Sample ID (Depth)								Tier 1 SRO
	SB-10 (1'-3')	SB-10 (8'-10')	SB-11 (1'-3')	SB-11 (8'-10')	SB-12 (1'-3')	SB-12 (8'-10')	SB-13 (1'-3')	SB-13 (8'-10')	
Naphthalene	<0.285	<0.0298	<0.0357	<0.0298	<0.0308	<0.0285	<0.0282	<0.0303	84[1]
Acenaphthene	<0.479	<0.050	<0.0601	<0.050	<0.0517	<0.0479	<0.0475	<0.0508	570[1]
Anthracene	0.363	0.007	<0.0466	0.004	<0.0401	<0.0372	<0.0368	<0.0394	12,000[1]
Fluoranthene	6.507	0.019	<0.0395	0.025	<0.0339	<0.0315	<0.0312	<0.0334	4,300[1]
Fluorene	<0.626	<0.0653	<0.0785	<0.0653	<0.0675	<0.0626	<0.062	<0.0664	560[1]
Pyrene	6.880	0.013	<0.0766	0.015	<0.0659	<0.0611	<0.0606	<0.0649	4,200[1]
Acenaphthylene	<0.714	<0.0745	<0.0895	<0.0745	<0.077	<0.0714	<0.0707	<0.0757	N/A
Benzo(ghi)perylene	1.339	<0.032	<0.0385	<0.032	<0.0331	<0.0307	<0.0304	<0.0325	N/A
Phenanthrene	3.444	0.017	<0.0428	0.011	<0.0368	<0.0341	<0.0338	<0.0362	N/A
Benzo(a)anthracene	2.859	0.011	<0.00372	0.009	<0.0032	<0.00296	<0.00294	<0.00315	2[1]
Benzo(a)pyrene	1.572	<0.00476	<0.00572	0.007	<0.0492	<0.00456	<0.00452	<0.00484	0.8[2]
Benzo(b)fluoranthene	1.982	0.009	<0.00515	0.009	<0.00443	<0.0041	<0.00407	<0.00436	5[1]
Benzo(k)fluoranthene	1.008	0.004	<0.00486	0.004	<0.00418	<0.00388	<0.00384	<0.00411	49[1]
Chrysene	2.146	0.007	<0.00429	0.007	<0.00369	<0.00342	<0.00339	<0.00363	160[1]
Dibenzo(a,h)anthracene	1.183	<0.00714	<0.00858	<0.00714	<0.00738	<0.00684	<0.00678	<0.00726	0.8[2]
Indeno(1,2,3-cd)pyrene	1.180	<0.0102	<0.0123	<0.0102	<0.0106	<0.0098	<0.00972	<0.0104	8[1]
Benzene	<0.00315	<0.00310	0.008	0.157	<0.0033	<0.00315	<0.0033	<0.003	0.03[1]
Toluene	<0.00315	<0.00310	0.020	0.108	<0.0033	<0.00315	<0.0033	<0.003	12[1]
Ethyl Benzene	<0.00315	<0.00310	0.046	0.129	<0.0033	<0.00315	<0.0033	<0.003	13[1]
Xylenes (total)	<0.00630	<0.00620	0.115	1.609	<0.0066	<0.00630	<0.0066	<0.006	150[1]

Bold - indicates an exceedance of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

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Table 2. (continued) Chemical Analysis of Soil Samples (mg/Kg)
PNAs - via USEPA Method 8310 and BTEX - via USEPA Methods 8020

Compound	Sample ID (Depth)				Tier 1 SRO
	SB-14 (1'-3')	SB-14 (8'-10')	SB-15 (1'-3')	SB-15 (8'-10')	
Naphthalene	<0.095	<0.105	<0.095	<0.100	84[1]
Acenaphthene	<0.160	<0.176	<0.160	<0.168	570[1]
Anthracene	<0.124	<0.137	0.015	<0.130	12,000[1]
Fluoranthene	<0.105	<0.116	0.152	<0.110	4,300[1]
Fluorene	<0.209	<0.231	<0.209	<0.220	560[1]
Pyrene	<0.204	<0.225	0.165	<0.214	4,200[1]
Acenaphthylene	<0.238	<0.263	<0.238	<0.250	N/A
Benzo(ghi)perylene	<0.102	<0.113	0.082	<0.108	N/A
Phenanthrene	<0.114	<0.126	0.051	<0.120	N/A
Benzo(a)anthracene	<0.00988	<0.0109	0.061	<0.0104	2[1]
Benzo(a)pyrene	<0.0152	<0.0168	0.063	<0.016	0.8[2]
Benzo(b)fluoranthene	<0.0137	<0.0151	0.084	<0.0144	5[1]
Benzo(k)fluoranthene	<0.0129	<0.0143	0.040	<0.0136	49[1]
Chrysene	<0.0114	<0.0126	0.092	<0.012	160[1]
Dibenzo(a,h)anthracene	<0.0228	<0.0252	0.050	<0.024	0.8[1]
Indeno(1,2,3-cd)pyrene	<0.0327	<0.0361	0.058	<0.0344	8[1]
Benzene	<0.00325	<0.00345	<0.0035	<0.00325	0.03[1]
Toluene	<0.00325	<0.00345	<0.0035	<0.00325	12[1]
Ethyl Benzene	<0.00325	<0.00345	<0.0035	<0.00325	13[1]
Xylenes (total)	<0.00650	<0.00690	<0.0070	<0.00650	150[1]

Bold - indicates an exceedence of the most stringent Tier 1 SRO
[1] - SRO Based upon the soil component of groundwater ingestion exposure pathway
[2] - SRO Based upon the soil ingestion exposure pathway

Table 3. Summary of Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Depth (feet)	pH Method 9040/9041	Flash Point (F)	Paint Filter Method 9095	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB1-1	0-2	7.54	>180	Pass	NA	<0.004	0.0707
SB1-2	4-6	6.60	>180	Pass	NA	<0.004	0.0290
SB1-3	8-10	6.79	>180	Pass	NA	<0.004	0.1040
SB2-1	0-2	6.5	>180	Pass	NA	<0.004	0.0000[1]
SB2-2	4-6	7.08	>180	Pass	NA	<0.004	0.0363
SB3-1	0-2	6.44	>180	Pass	NA	<0.004	0.0116
SB3-2	4-6	6.15	>180	Pass	NA	<0.004	0.0222
SB3-3	8-10	6.93	>180	Pass	NA	<0.004	0.0110
SB4-1	0-2	7.08	>180	Pass	NA	<0.004	0.1270
SB4-2	4-6	6.43	>180	Pass	NA	<0.004	0.0344
SB4-3	8-10	7.43	>180	Pass	NA	<0.004	0.0490
SB5-1	0-2	6.40	>180	Pass	NA	<0.004	0.0612
SB5-2	4-6	6.48	>180	Pass	NA	<0.004	0.0214
SB5-3	8-10	7.61	>180	Pass	NA	<0.004	0.0710
SB6-1	0-2	7.14	>180	Pass	NA	<0.004	0.0612
SB6-2	4-6	6.36	>180	Pass	NA	<0.004	0.0000
SB7-1	0-2	8.37	>180	Pass	NA	<0.004	0.1705
SB7-2	4-6	6.39	>180	Pass	NA	<0.004	0.1090
SB8-1	0-2	6.22	>180	Pass	NA	<0.004	0.0501
SB8-2	4-6	7.28	>180	Pass	NA	<0.004	0.0600
SB8-3	8-10	8.33	>180	Pass	NA	<0.004	0.0049
SB9-1	0-2	7.17	>180	Pass	NA	<0.004	0.0360
SB9-2	4-6	7.31	>180	Pass	NA	0.0319	0.0832
SB9-3	8-10	6.26	>180	Pass	NA	<0.004	0.1051
SB-10	1-3	NA	NA	NA	4.32	<0.004	NA
SB-10	8-10	NA	NA	NA	4.32	0.006	NA
SB-11	1-3	NA	NA	NA	3.02	<0.004	NA
SB-11	8-10	NA	NA	NA	4.07	<0.004	NA
SB-12	1-3	NA	NA	NA	6.17	<0.004	NA

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Table 3. (continued) Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Depth (feet)	pH Method 9040/9041	Flash Point (°F)	Paint Filter Method 9095	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB-12	8-10	NA	NA	NA	0.422	<0.004	NA
SB-13	1-3	NA	NA	NA	0.326	<0.004	NA
SB-13	8-10	NA	NA	NA	<0.0244	<0.004	NA
SB-14	1-3	NA	NA	NA	2.73	<0.004	NA
SB-14	8-10	NA	NA	NA	260	3.62	NA
SB-15	1-3	NA	NA	NA	19.9	<0.004	NA
SB-15	8-10	NA	NA	NA	<0.0240	<0.004	NA

NA - Sample not analyzed for this compound
[1] - Actual lab results indicate negative value
Bold - indicates an exceedance of the most stringent Tier 1 SRO (Tier 1 SRO for TCLP Lead = 0.0075-mg/L)

Table 4. Summary of Groundwater Sampling and Analysis Results (mg/L)
BTEX, PNAs, and Total Lead via USEPA SW-846 Methods 8260 and 8021, 8310, and 6010B

Monitoring Well	BTEX	PNAs	Lead
MW-1	None Detected	None Detected	None Detected
MW-3	None Detected	None Detected	**0.016**
MW-4	None Detected	None Detected	None Detected

Bold - indicates an exceedance of the Tier 1 GRO (Tier 1 GRO for Lead = 0.0075-mg/L)

As shown in Table 4, the only constituent observed in the groundwater samples collected from the three wells that produced water was Lead. MW-3 contained Lead at a concentration of 0.016-mg/L.

Soil sampling and analysis results can be compared to the Tier 1 SROs provided in TACO for three different routes of exposure (soil component of the groundwater ingestion route, soil ingestion route, soil inhalation route). For purposes of this Tier 1 analysis, the observed soil contaminant concentrations are compared to the most stringent the Tier 1 SROs. The site is soon to be donated to the Village of Lyons for the construction of a veterans memorial. The exposure durations associated with this proposed land use (less than 25 years) indicate that the applicable property classification should be industrial/commercial. Table 5 summarizes the Tier 1 SRO exceedances

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observed during all phases of the subsurface investigation, based upon the anticipated property classification of industrial/commercial. Figure 2 shows the layout of the sampling locations at which these Tier 1 SRO exceedances were observed.

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Table 5. Tier 1 SRO Exceedances

Contaminant of Concern	Sampling Location	Sample Depth (ft bgs)	Concentration (ppm)	Tier 1 SRO for Migration to Groundwater (ppm)	Tier 1 SRO for Soil Ingestion (ppm)	Tier 1 SRO for Soil Inhalation (ppm)
Benzene	B-2	8.7'-9.3'	1.3	0.03	200	1.5
	B-4	6'-6.7'	**1.540**	0.03	200	1.5
	B-10	6.7'-7.4'	**0.0863**	0.03	200	1.5
	SB-9	0'-2'	**0.458**	0.03	200	1.5
		4'-6'	**1.510**	0.03	200	1.5
		8'-10'	**5.930**	0.03	200	1.5
	SB-11	8'-10'	**0.157**	0.03	200	1.5
Ethylbenzene	B-5B	7.5'-9.0'	**15.100**	13	20,000	58
Benzo(a)anthracene	SB-6	0'-2'	**3.56**	2	8	NA
		4'-6'	**4.80**	2	8	NA
	SB-10	1'-3'	**2.059**	2	8	NA
Benzo(a)pyrene	SB-1	8'-10'	**1.62**	8	0.8	NA
	SB-6	0'-2'	**2.26**	8	0.8	NA
		4'-6'	**2.71**	8	0.8	NA
	SB-10	1'-3'	**1.572**	8	0.8	NA
Dibenzo(a,h)anthracene	B-9	4.5'-5.2'	**1.550**	2	0.8	NA
	SB-1	8'-10'	**1.95**	2	0.8	NA
	SB-6	0'-2'	**1.79**	2	0.8	NA
		4'-6'	**2.74**	2	0.8	NA
	SB-9	4'-6'	**1.35**	2	0.8	NA
Indeno(1,2,3-cd)pyrene	SB-6	0'-2'	**12.50**	14	8	NA
		4'-6'	**13.9**	14	8	NA
TCLP Lead	SB-14	8'-10'	**3.65**	0.0075	NA	NA

ppm - parts per million is equivalent to mg/Kg except for TCLP Lead values, which are mg/L
Bold - indicates an exceedence of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

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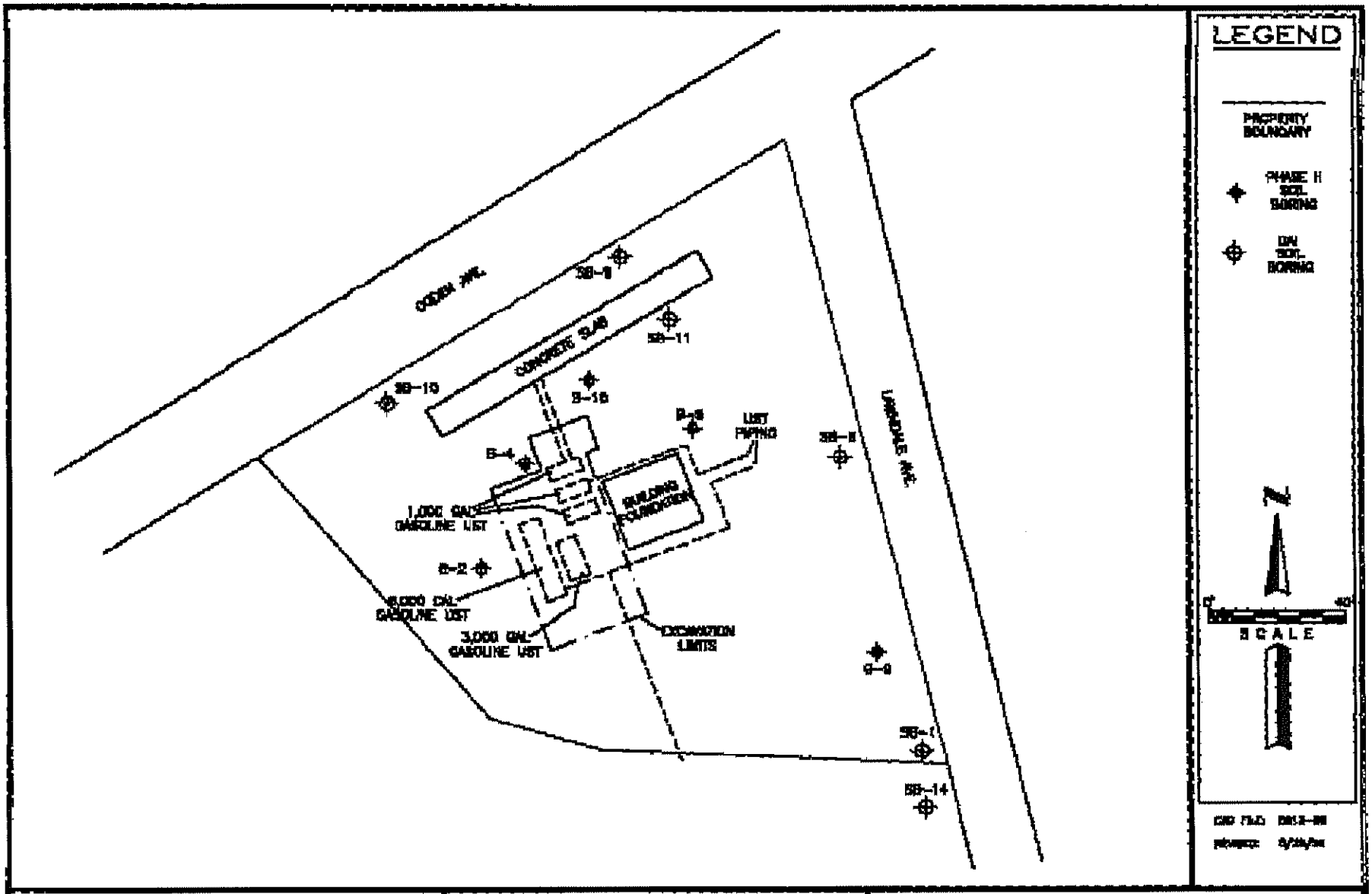

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FIGURE 2
LOCATIONS OF TIER 1
SRO EXCEEDANCES

Review of Table 5 indicates Tier 1 SRO exceedances for benzene near the location of the former USTs (B-2 and B-4) and a Tier 1 SRO exceedance for ethylbenzene at the terminus of the former UST piping (B-5B). Tier 1 exceedances were also observed for benzene in the vicinity of the former pump island at the northern edge of the site along Ogden Avenue (B-10, SB-9 and SB-11).

DAI confirmed the PNA contamination observed during the initial Phase II investigation at the eastern edge of the site along Lawndale Avenue. However, because PNAs were not observed in excess of the Tier 1 SROs at B-5 through B-7 and SB-11 through SB-15 (the area between Lawndale Avenue and the former USTs, UST piping, and pump island) it appears that the PNAs are migrating from an off-site source on the east side of Lawndale Avenue. DAI also observed PNAs at concentrations above the most stringent Tier 1 SROs in the pump island area adjacent Ogden Avenue. However, the location of the PNA exceedances in this area do not correlate with the benzene exceedances discussed above. Furthermore, (as discussed in the 45-Day Report) the USTs at the site were only used to store gasoline, and not diesel fuel. Pursuant to 35 IAC 732 and 742, PNAs are not an indicator compound of gasoline contamination. Therefore, the PNAs observed in the former pump island area also appear to be emanating from an off-site source. Extensive soil sampling has been done at the site in an attempt to, pursuant to 35 IAC 742, delineate observed soil contamination to the most stringent Tier 1 SROs. However, because it appears that there is not a potential on-site source of PNAs and the observed exceedances are within approximately 12-ft of the property boundary, it would not be possible to fully delineate to Tier 1 SROs without extensive sampling on other properties.

Lead was observed in the soil sample collected from SB-14 at 8-ft to 10-ft bgs via TCLP analysis at a concentration in excess of the Tier 1 SRO. However, the other observed Lead and TCLP Lead concentrations significantly closer to the potential source areas were at or below background concentrations. Therefore, the TCLP Lead exceedance observed at SB-14 is not believed to be associated with the USTs.

Table 5 showed the sampling locations, depths, and concentrations for those contaminants observed in excess of the Tier 1 SROs for the soil ingestion and inhalation exposure pathways. The soil

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ingestion exposure pathway is only a consideration for vadose zone soil contamination within 3-ft bgs, and the soil inhalation exposure pathway is only a consideration for vadose zone soil contamination within 10-ft bgs. Table 6 shows the locations where the observed contaminant concentrations exceed the Tier 1 SROs for the soil inhalation and ingestion exposure pathways after eliminating the Tier 1 exceedances that were observed at depths below the range applicable to each exposure pathway.

Table 6. Tier 1 SRO Exceedances for the Ingestion and Inhalation Exposure Pathways

Contaminant of Concern	Sampling Location	Sample Depth (ft bgs)	Concentration (ppm)	Tier 1 SRO for Soil Ingestion (ppm)	Tier 1 SRO for Soil Inhalation (ppm)
Benzene	B-4	6'-6.7'	**5.93**	200	1.5
Benzo(a)pyrene	SB-6	0'-2'	**2.26**	0.8	NA
Dibenzo(a,h)anthracene		0'-2'	**1.79**	0.8	NA
Indeno(1,2,3-cd)pyrene		0'-2'	**12.50**	8	NA
Benzene	SB-9	4'-6'	**1.510**	200	1.5
		8'-10'	**5.930**	200	1.5
Benzo(a)pyrene	SB-10	1'-3'	**1.572**	0.8	NA

Bold - indicates an exceedance of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

J.2. Physical Soil Characteristics

J.2.a. Soil Attenuation Capacity

This section requires that the sum of the concentrations of the contaminants of concern (or organic contaminants) do not exceed the soil attenuation capacity. The soil attenuation capacity is defined in 742.215. For the purposes of this analysis, the soil attenuation capacity is equal to the natural organic carbon concentration of the soil. Table 3 reports the Fraction of Organic Carbon (f_{oc}) observed in twenty-four (24) soil samples collected from the site. Based upon these results, the average f_{oc} of the subsurface soils at the site is 5.5% which is equivalent to 55,000-mg/Kg. Review of the soil sampling and analysis results summarized in Tables 1 and 2 of the text of this report clearly indicate that the sum of all organic compounds observed at any discrete sampling point is

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significantly below the soil attenuation capacity (55,000-mg/Kg) of the soils. Additionally, the values shown in these summary tables are below the TACO default values for f_{oc} of 2,000-mg/Kg (subsurface soils, i.e. at least 1-meter below the surface) and 6,000-mg/Kg (surface soils, i.e. within 1-meter of the surface). Therefore, the soil attenuation capacity is not exceeded at any location on the site.

J.2.b. Soil Saturation Limit

This section requires that the concentrations of any individual organic contaminants of concern remaining in the soil do not exceed the soil saturation limit. The soil saturation limits for compounds whose melting points are less than 30°C are provided in 742 Appendix A, Table A. Table 7 compares the maximum detected concentrations of the contaminants of concern to the saturation limits provided in 742 Appendix A, Table A, and indicates that none of the observed concentrations exceed the soil saturation limit.

Table 7. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit

Compound	Maximum Observed Concentration[1] (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	5.93	870
Ethylbenzene	15.1	400
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

[1] - Maximum observed concentrations summarized in Table 5
NA - A Soil Saturation Limit has not been established for this compound in 742 Appendix A, Table A

J.2.c. Characteristic of Reactivity

This requires that none of the soils exhibit any of the characteristics of reactivity for hazardous wastes. Based upon the contaminants of concern, there is no reason to believe that any soils beneath the site exhibit the characteristics of reactivity.

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J.2.d. The pH of the Soils

This requires that none of the soils exhibit a pH less than 2.0 or greater than 12.5. Twenty-four (24) soil samples were analyzed for pH via USEPA Method 9045. The results of these analyses were summarized in Table 3. The pH of these samples ranged from 6.15 to 8.37.

J.2.e. Characteristic of Toxicity

This requires that none of the remaining soils are hazardous wastes by virtue of the characteristic of toxicity for the following compounds: arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver. Of these eight (8) RCRA compounds, only lead is a contaminant of concern at the site. The TCLP Lead concentrations observed in the thirty-five (35) soil samples were below the hazardous regulatory level (5-mg/L). There is no evidence nor reason to believe that the soils beneath the site exhibit the characteristics of toxicity for the remaining seven (7) RCRA compounds.

J.3. Inhalation Exposure Route

As shown in Table 7, the Tier 1 SRO for the soil inhalation exposure route was exceeded for benzene in two separate locations. To ensure that these observed exceedances will not adversely impact human health, the portion of the site shown in Figure 3 will be asphalt-paved. A demonstration that this asphalt-paving meets the requirements set forth in 742.1105 for an engineered barrier is included in Appendix B. In addition, prior to future intrusive construction activities, the property owner will ensure that construction workers are notified of the potential health hazards and that the proper industrial hygiene practices are observed.

J.4. Ingestion Exposure Route

As shown in Table 7, the Tier 1 SROs for the soil ingestion exposure route were exceeded for PNAs on-site. To ensure that these observed exceedances will not adversely impact human health, the portion of the site shown in Figure 3 will be asphalt-paved. A demonstration that this asphalt-paving meets the requirements set forth in 742.1105 for an engineered barrier is included in Appendix B. In addition, prior to future intrusive construction activities, the property owner will ensure that construction workers are notified of the potential health hazards and that the proper industrial hygiene practices are observed.

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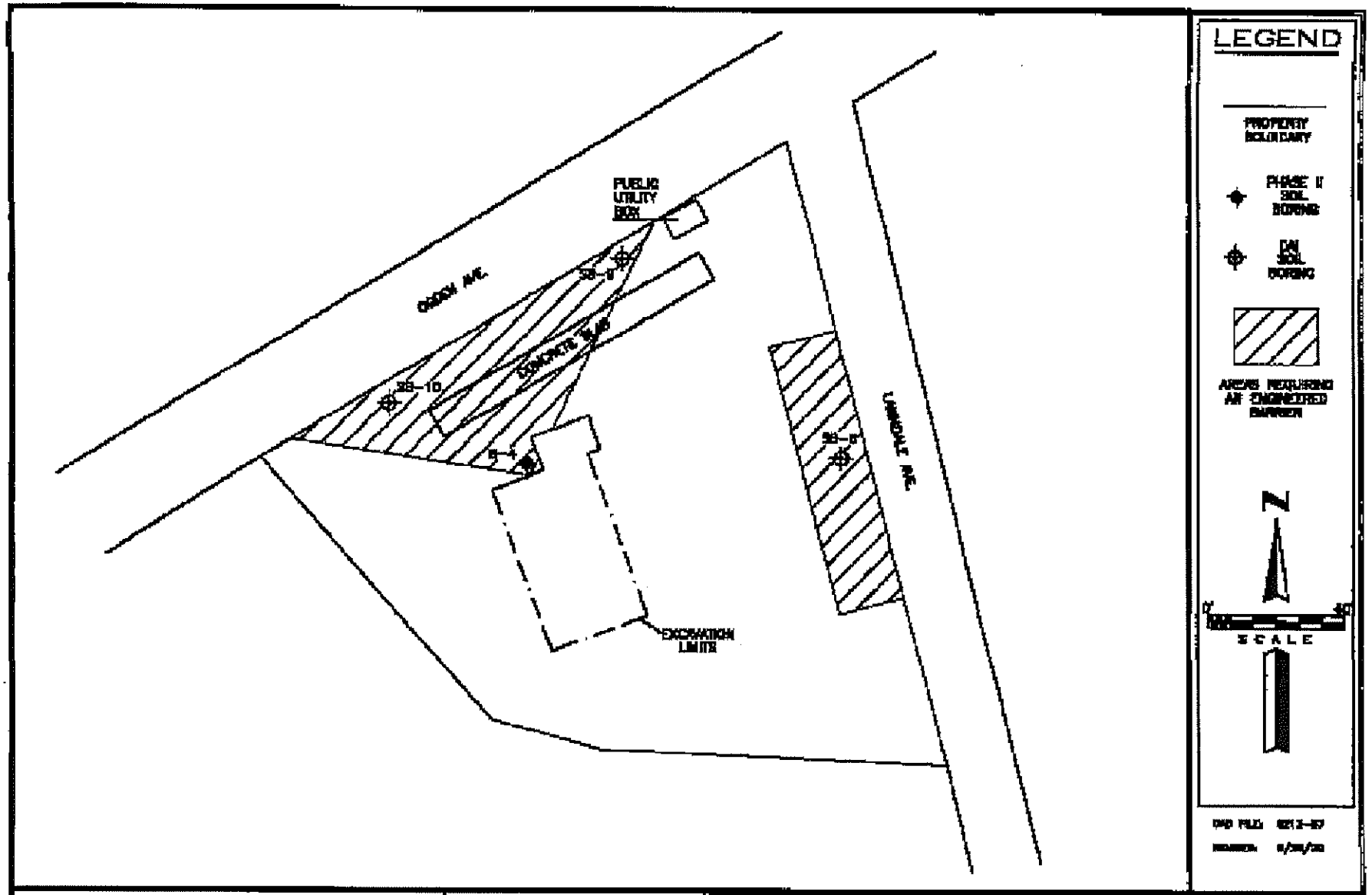

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FIGURE 3
AREAS REQUIRING AN
ENGINEERED BARRIER

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J.5. Groundwater Ingestion Exposure Route

On May 18, 1999, the Village of Lyons passed Ordinance No. 5-18-99-3, *AN ORDINANCE AMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH PROHIBITS WELLS FOR POTABLE WATER SUPPLY.* This ordinance will be implemented as an institutional control to eliminate the groundwater ingestion exposure pathway in the determination of Tier 2 SROs and GROs. A demonstration that this ordinance meets the requirements set forth in 35 IAC 742.300, 742.305, 742.320, and 742.1015 and a certified copy of this ordinance are included in Appendix C.

A Tier 2 GRO must be developed to ensure that the lead contamination observed at MW-3 in excess of the Tier 1 GRO will have attenuated/diluted to acceptable levels before encountering the downgradient point of exposure. The groundwater prohibition ordinance prohibits the use of groundwater as a potable water supply within the Village of Lyons municipal boundaries. The downgradient municipal boundary is approximately 3800-ft from the site. As this distance is greater than the required 2,500-ft setback zone and surface water is not encountered downgradient of the site before the municipal boundary, the downgradient point of human exposure will be the Village of Lyons municipal boundary. Based upon this, a Tier 2 GRO was developed by TACO R26 modeling from the site to the municipal boundary considering the Tier 1 GRO as an acceptable level of residual contamination at the point of human exposure. This Tier 2 GRO and the lead concentration observed during the groundwater sampling are compared in Table 8. Complete copies of the modeling are included in Appendix D. Review of Table 8 indicates that the lead concentration observed at MW-3 is below the proposed Tier 2 GRO.

Table 8. Lead Concentration at MW-3 and Calculated Tier 2 GRO

Compound	Lead Concentration Observed at MW-3 (mg/L)	Tier 1 GRO (mg/L)	Tier 2 GRO (mg/L)
Lead	0.016	0.0075	39.0

As discussed earlier, the groundwater ingestion exposure pathway, and, in turn, the soil component of the groundwater ingestion exposure pathway, has been eliminated by the Village of Lyons

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Groundwater Prohibition Ordinance. However, it must be demonstrated that any residual soil contamination migrating to groundwater will have attenuated to acceptable concentrations before encountering the downgradient point of human exposure. TACO equations R12 and R26 were used to calculate a Tier 2 SRO for this exposure pathway, considering, as for the Tier 2 GRO, the acceptable levels of residual contamination to be the Tier 1 GROs and the point of human exposure to be the Village of Lyons municipal boundary. Complete copies of this modeling are included in Appendix E. Review of Table 9 indicates that the maximum observed soil concentrations are below the calculated Tier 2 SROs.

Table 9. Tier 2 SROs and Maximum Observed Contaminant Concentrations

Contaminant	Maximum Observed Concentration (mg/Kg)	Tier 1 SRO for the Migration to Groundwater Exposure Pathway (mg/Kg)	Calculated Tier 2 SRO (mg/Kg)
Benzene	5.93	0.03	3300
Ethylbenzene	15.1	13	400
Benzo(a)anthracene	4.8	2	3.6×10^{16}
Dibenzo(a,h)anthracene	2.74	2	2.9×10^{15}
Indeno(1,2,3-cd)pyrene	13.9	14	2.3×10^{17}

TCLP Lead analysis of DAI's soil sample SB-14 (8-ft to 10-ft bgs) revealed concentrations above the Tier 1 soil component of the groundwater ingestion exposure pathway. Although this exposure pathway has been eliminated by the Village of Lyons Ordinance, the potential impacts at the downgradient point of human exposure must still be considered. TACO R12 modeling does not afford the opportunity to develop a SRO based upon a TCLP analysis. However, R26 modeling was completed (assuming the TCLP extract concentration would be the actual groundwater concentration) to confirm that the observed TCLP Lead concentration will attenuate/dilute to a sufficient degree, such that, its presence will not adversely impact human health at the Village of Lyons municipal boundary. The result of this demonstration is included below in Table 10. A complete copy of this modeling is provided in Appendix D. Even using this conservative approach, the modeling indicated the TCLP Lead concentration observed at SB-14, which is not believed to be associated with the USTs, will not adversely affect human health at the municipal boundary.

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Table 10. Observed TCLP Concentration at SB-14 and Calculated C(x)

Contaminant	Observed Concentration at SB-14 (mg/L)	Tier 1 SRO (mg/L)	Calculated C(x) (mg/L)
TCLP Lead	3.62	0.0075	0.0007

K. SUPPORTING DOCUMENTATION

K.1. A Site Map to Scale and Oriented North

Figure 4 is a site map showing the former UST system and excavation, product and dispenser lines, pumps and islands, underground utilities, nearby structures, locations of soil borings and monitoring wells, and property boundaries. Figure 5 is a reproduction of the figure delineating a 200-ft radius from the former UST system that was submitted in the *Site Classification and Workplan and Budget.*

K.2. A Horizontal Cross Section Showing the Various Geologic Units

Figure 6 is a site map showing the location of the cross-section A-A'. Figure 7 is the geologic units observed through the cross-section A-A'.

K.3. Laboratory Certifications

The laboratory certifications for the chemical and physical analysis of soil and groundwater samples are provided in Appendix F.

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT

C. COMPLETION INFORMATION

C.1. Chronological Narrative

On June 27, 1995, five (5) underground storage tanks (USTs) were removed from the property located at 4226 South Lawndale Avenue in Lyons, Illinois in the presence of a representative from the Lyons Fire Department. During the removal activities, it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. The Illinois Emergency Management Agency (IEMA) was immediately notified of the suspected release, and the IEMA Incident Number 951401 was assigned. Specific details regarding the UST and associated piping

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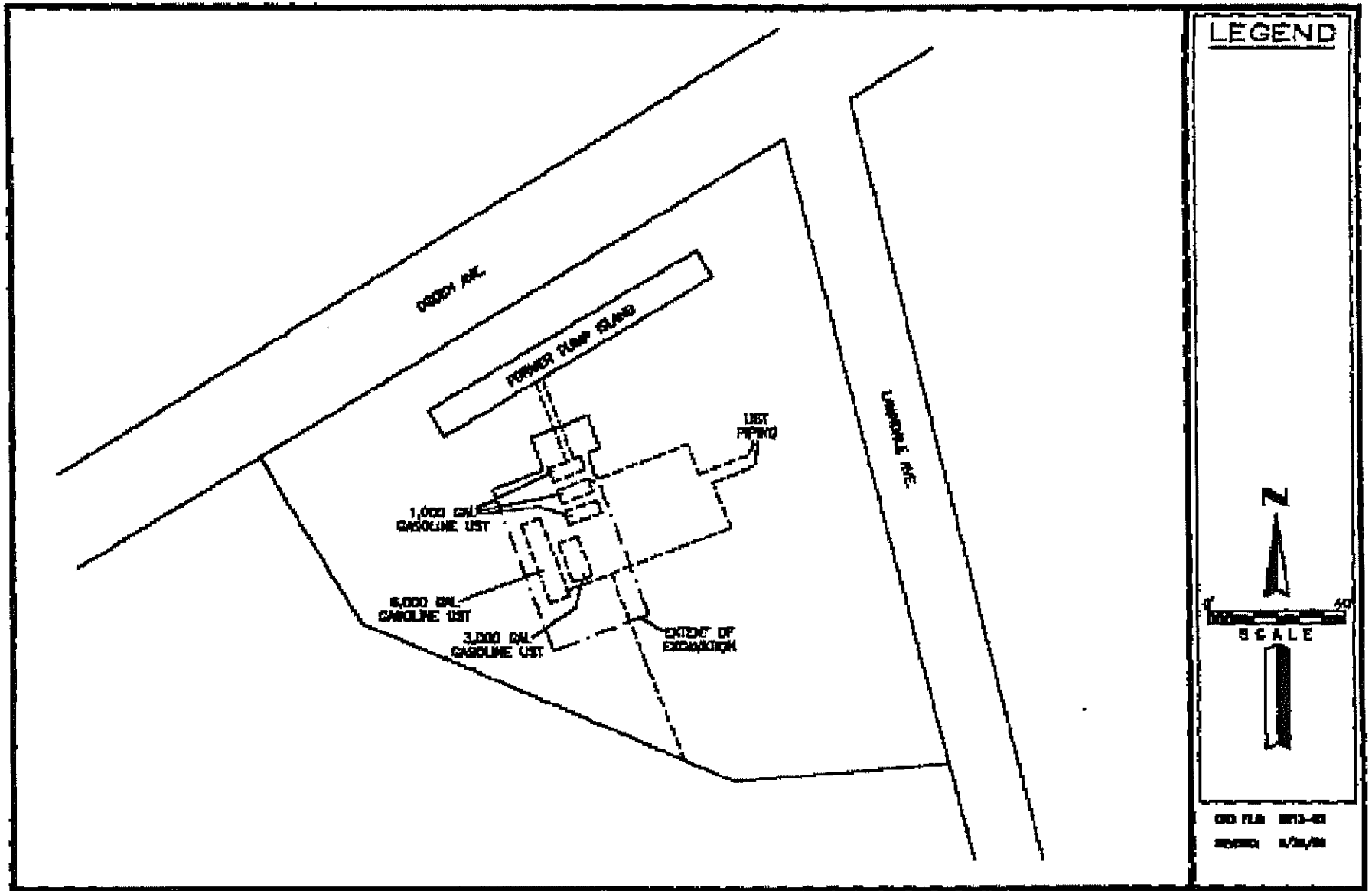

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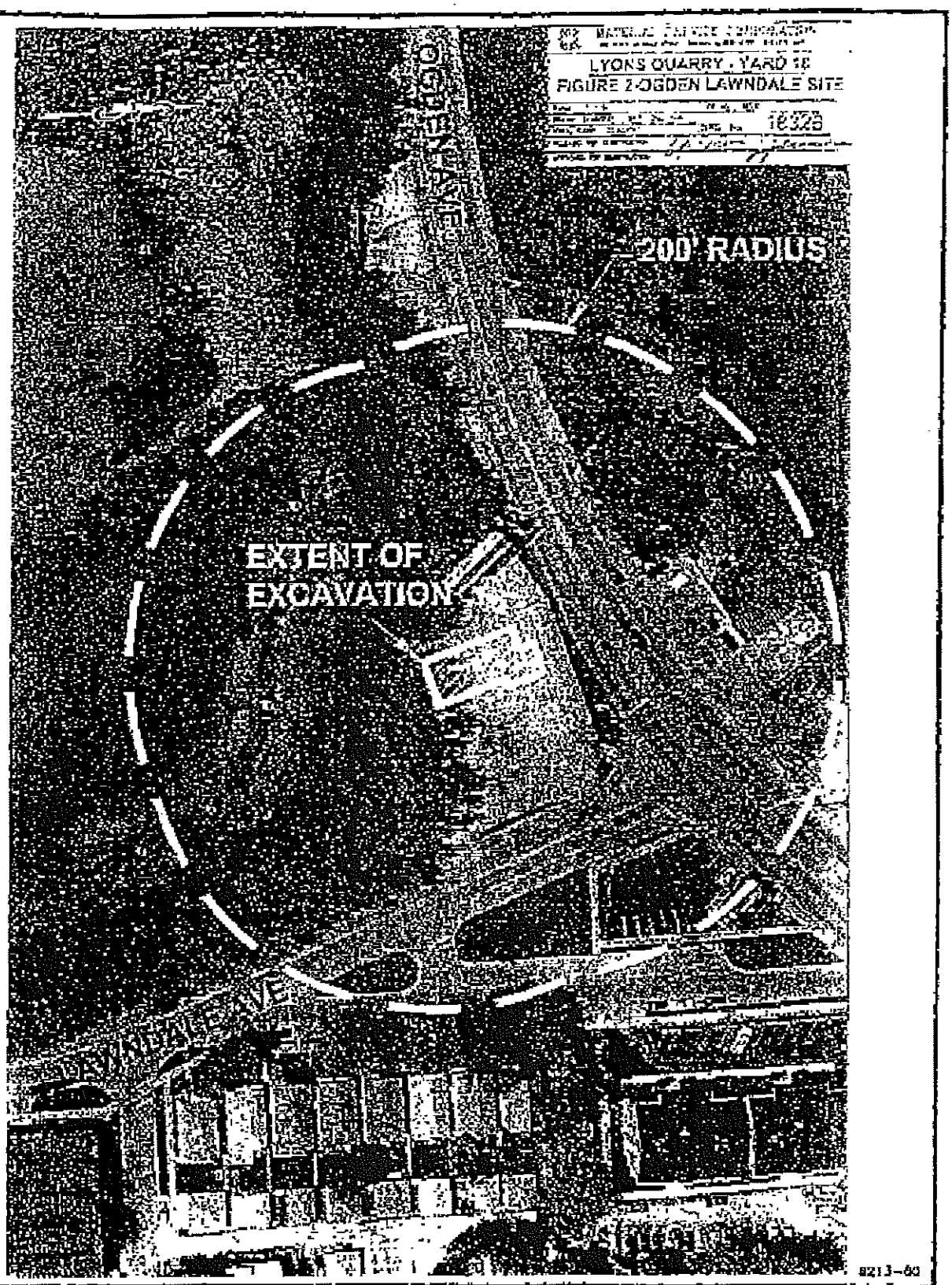
FIGURE 4
SITE PLAN SHOWING LOCATION OF
FORMER USTs AND ASSOCIATED PIPING



ENDAL	MSC YARD 18 4226 SOUTH LAWNDALE AVE. LYONS, IL	FIGURE 5 REPRODUCTION OF SITE MAP SHOWING 200-FT RADIUS FROM SITE CLASSIFICATION WORKPLAN

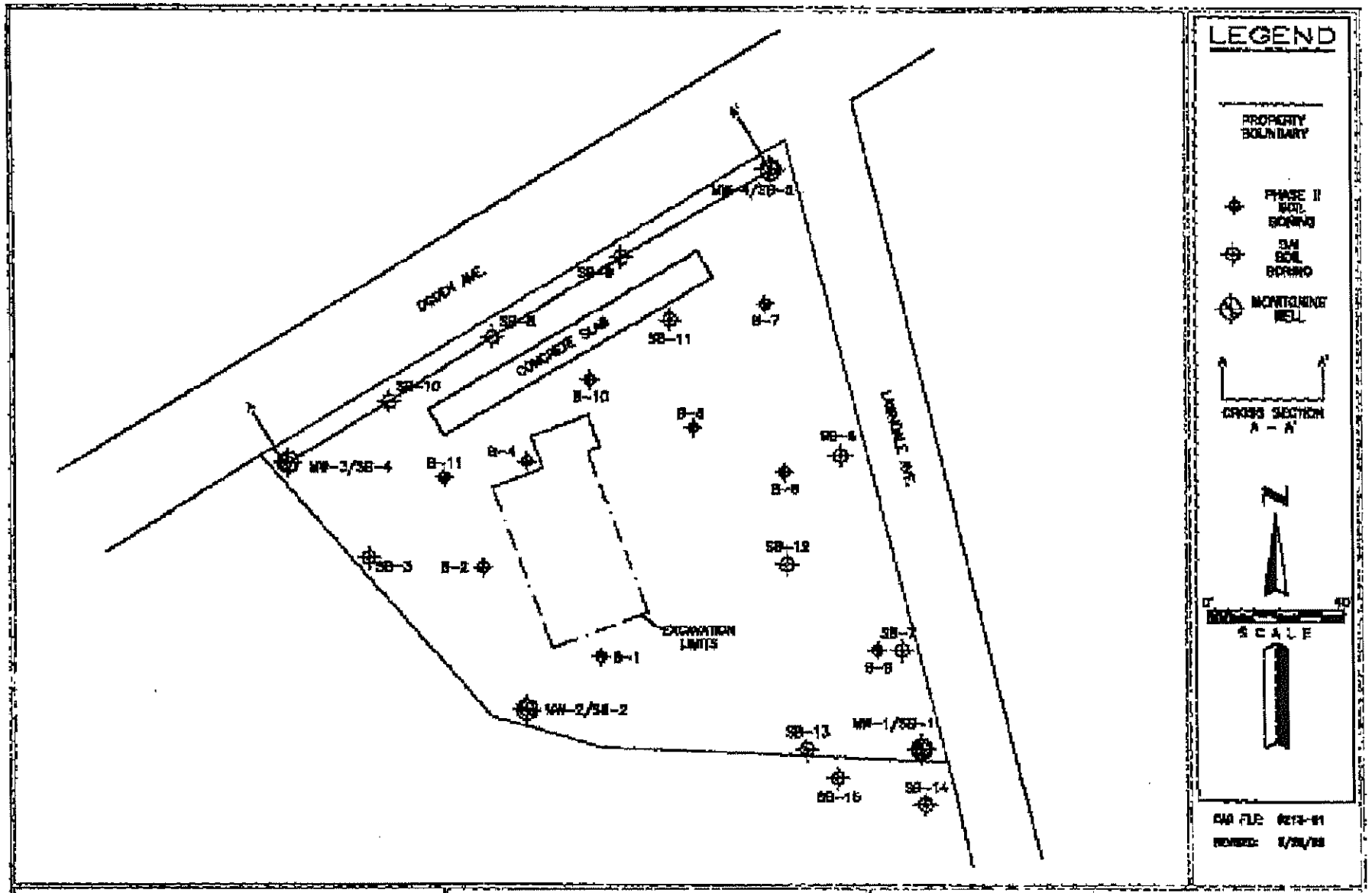


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FIGURE 6
LOCATION OF GEOLOGICAL
CROSS SECTION A – A'

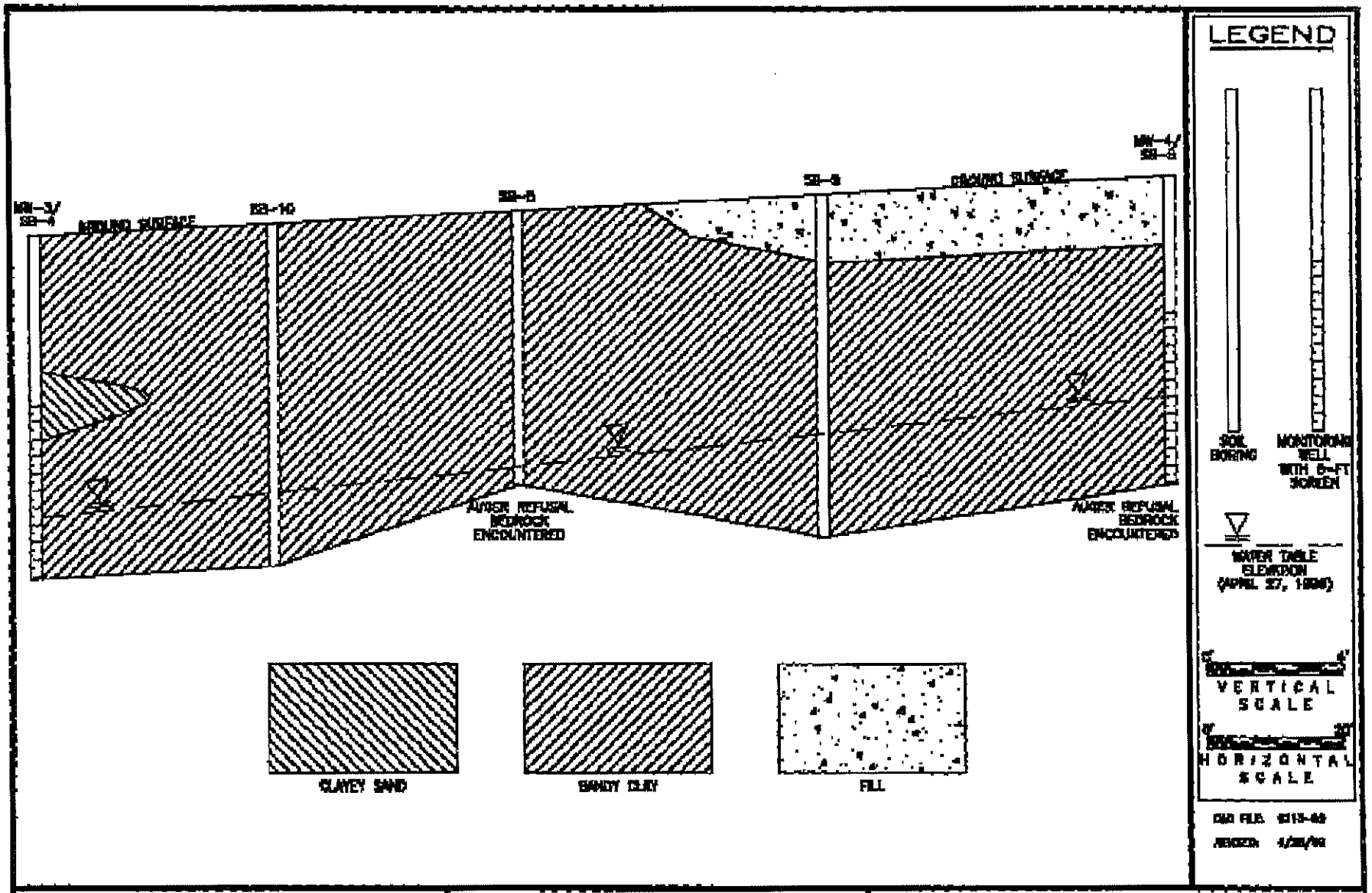

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FIGURE 7
GEOLOGICAL CROSS SECTION
A – A'

removal activities and soil excavation and disposal were submitted to the agency in the *45-Day Report*, dated March 25, 1996. As previously discussed in this report, an engineered barrier will be placed over a portion of the site as a corrective measure to eliminate the soil inhalation and ingestion exposure pathways.

C.2. Remediation of "High Priority" Threats

As part of the UST removal activities on June 27, 1995, 330-yd^3 of soil and backfill exhibiting visual and olfactory evidence of petroleum contamination were excavated and disposed of off-site. Further details regarding these activities were previously submitted in the *45-Day Report*.

C.3. Elimination of "High Priority" Threats through Exposure Pathway Exclusion

On May 18, 1999, the Village of Lyons passed Ordinance No. 5-18-99-3, *AN ORDINANCE AMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH PROHIBITS WELLS FOR POTABLE WATER SUPPLY*. This ordinance will be implemented as an institutional control to eliminate the groundwater ingestion exposure pathway.

Benzene and PNAs were observed at concentrations in excess of the Tier 1 SROs for the soil inhalation and ingestion exposure routes at various locations across the site. To ensure that these observed exceedances will not adversely impact human health, a portion of the site will be asphalt-paved to eliminate these exposure pathways. In addition, prior to future intrusive construction activities, the property owner will ensure that construction workers are notified of the potential health hazards and that the proper industrial hygiene practices are observed.

C.4. Discussion of Cleanup Objective Determination

The analytical results, Tier 1 cleanup objectives, contaminants of concern observed at concentrations in excess of the Tier 1 cleanup objectives, and requested Tier 2 cleanup objectives were provided in Section J of this report.

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C.5. *Media Sampling and Analytical Procedures*

During a Phase II Site Investigation, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11) on March 14, 1995. The soil samples were submitted for laboratory analysis of BTEX via USEPA SW-846 Method 8020 and PNAs via USEPA SW-846 Method 8310.

Pursuant to the IEPA approved workplan, DAI conducted a subsurface investigation at the property to delineate the extent of soil contamination and determine if the groundwater beneath the site had been adversely impacted by prior gasoline filling station operations. The sampling and analytical procedures of DAI's investigation are detailed in the following sections.

C.5.1. *Soil Boring Procedures*

Fifteen (15) soil borings (SB-1 through SB-15) were drilled by Midwest Engineering Services of Orland Park, Illinois, using a truck-mounted drilling rig equipped with 4¼-inch internal diameter hollow stem augers. These soil borings were installed for the purposes of delineating the extent of BTEX and PNA contamination. On February 1, 1999, soil samples were collected at 0 to 2-ft bgs, 4 to 6-ft bgs, and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected at 1 to 3-ft bgs and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-10 through SB-15. The sampling spoon was decontaminated between each sampling event by scrubbing with a non-phosphate detergent followed by rinsing with tap water. All drilling equipment, and the sampling spoons, were decontaminated between soil borings using a high pressure steam cleaner. All drilling and sampling activities were conducted under the supervision of DAI.

Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. The monitoring wells were installed to depths between 7.5-ft and 10-ft bgs and were constructed of 2-inch diameter schedule 40 polyvinyl chloride (PVC) flush-threaded riser with a 5-ft section of 0.010-inch factory slotted PVC screen. The filter pack, consisting of an artificially introduced sand pack, was extended to 1-ft above the top of the screen. A layer of bentonite, at least 1-ft thick, was used to seal each well, and the remainder of the annular space was grouted with a

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mixture of cement and bentonite. Locking steel flush-mounted vaults were installed to secure and protect each well. All groundwater monitoring wells were installed by MES under the supervision of DAI.

C.5.2. Soil Classification Procedures

Soil samples were examined for overburden classification as well as for visual evidence of contamination. Soil type, consistency, and the thickness and depth of the units were used to develop soil boring logs and to define the site stratigraphy. The Unified Soil Classification System was used to classify the soil type.

The stratigraphy of the site was defined to the bedrock, observed at approximately 7-ft to 10-ft bgs. The soils beneath the site consist of a gray to brown sandy clay with fine sand seams observed in borings SB-1 and SB-4. Copies of the soil boring logs were developed by DAI are provided in Appendix G.

C.5.3. Headspace Vapor Analysis

Headspace vapor measurements were taken in the field to estimate the VOC content of soil samples using a Photovac MicroTip® photoionization detector (PID). The PID was calibrated with a 100-$ppm_{v/v}$ isobutylene-in-air commercial grade gas standard. The headspace samples were prepared by filling a clean 8-ounce jar approximately half full with soil collected from the sample interval. The jar was then covered with aluminum foil, sealed with the lid and allowed to equilibrate at ambient temperature and out of direct sunlight for at least 15-minutes. The sample headspace was screened for VOCs by inserting the PID probe through the aluminum foil approximately 1-inch into the sample jar.

C.5.4. Analysis of Soil Samples

The soil samples collected from SB-1 through SB-9 were submitted for chemical analysis of VOCs, PNAs, and TCLP Lead via USEPA Methods 8020, 8310, and 1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of VOCs were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035.

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Samples were also collected from these borings for the analysis of the landfill parameters Flash Point, Paint Filter, and pH via ASTM Method D492, USEPA Method 9095, and USEPA Method 9040/9041, respectively. Additionally, samples were collected for the analysis of the physical parameters Moisture Content, Ash Content, and Organic Matter Content via ASTM Method D2974 A&C. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory.

The soil samples collected from SB-10 through SB-15 were submitted for chemical analysis of BTEX, PNAs, Total Lead, and TCLP Lead via USEPA Methods 8020, 8310, 6010B, and 1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of BTEX were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory.

C.5.5. Static Water Level Measurements

Static water level measurements were collected from MW-1 and MW-4. MW-2 has failed to produce water and MW-3 has periodically contained water following substantial rainfalls. All water levels were measured using an electronic water level indicator capable of detecting water depth with an accuracy of ±0.01-ft. The elevation of the top of the well casing was surveyed and the water level data was referenced to an assumed on-site datum elevation of 100.00-ft.

On April 27, 1999, water was observed in MW-3 and static water levels were measured in MW-1, MW-3, and MW-4. The elevations of the groundwater in each well was calculated using the surveyed datum elevations and the depth to groundwater measurements. The potentiometric surface generated for the uppermost water-bearing unit using this data is presented in Figure 8. As can be seen from this figure the groundwater flow direction is west-southwesterly under a hydraulic gradient of 0.022-ft/ft.

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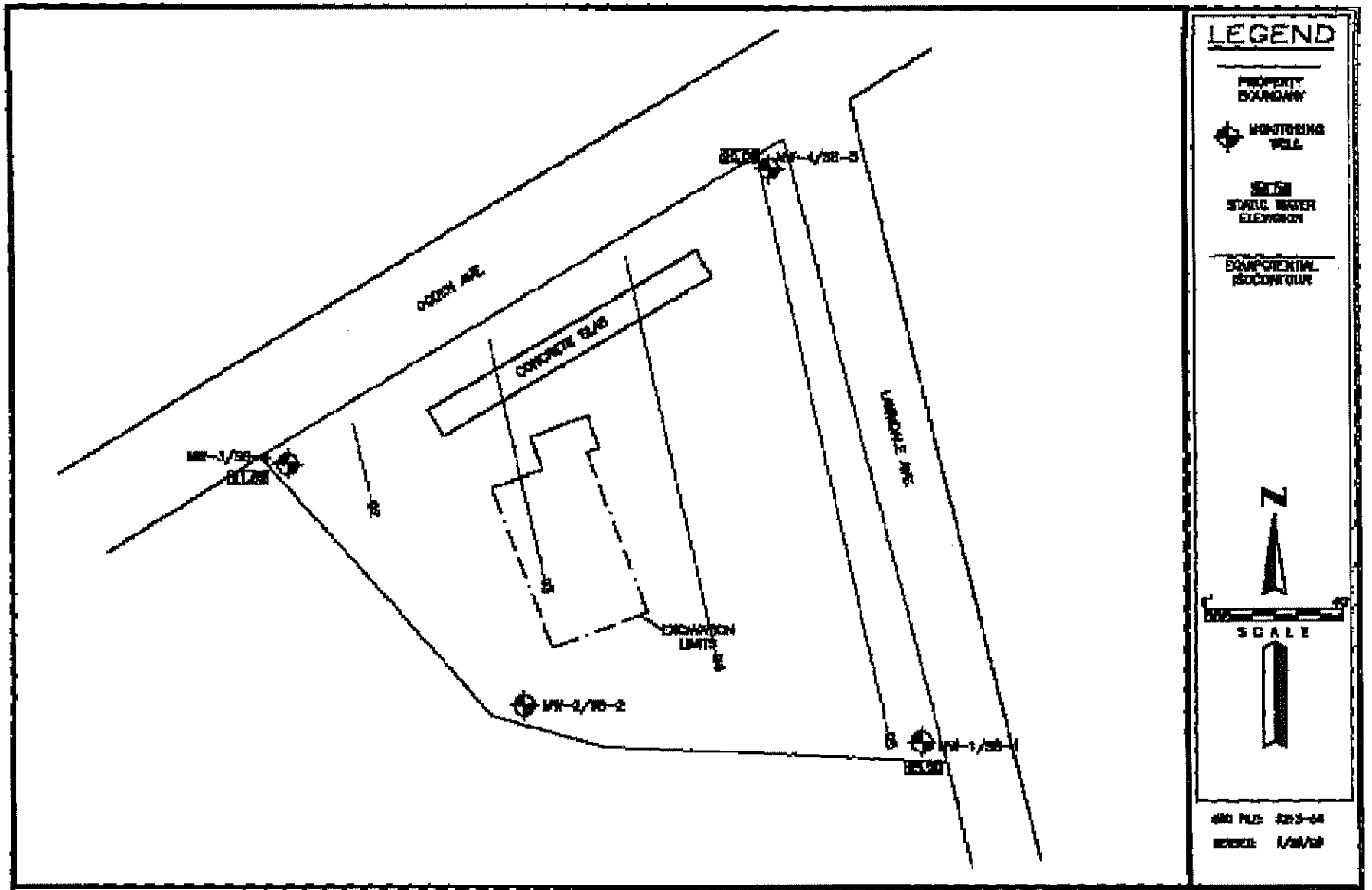

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FIGURE 8
POTENTIOMETRIC SURFACE
(APRIL 27, 1999)

All field equipment used to collect water level data was decontaminated prior to and between measurements to eliminate the potential for cross-contamination. Decontamination protocol consisted of an Alconox® soap and water wash and a triple distilled water rinse.

C.5.6. Rising Head Hydraulic Conductivity Testing

To determine the hydraulic conductivity of the saturated soils, single-well slug testing was performed at MW-1 and MW-4. The slug testing was conducted by removing a "slug" of water from the well and recording the water level changes that result from the instantaneous withdrawal of the slug. The rate of recovery observed in the well is a function of the hydraulic properties of the aquifer, including the hydraulic conductivity which was calculated using the appropriate well-flow equations. Because a slug insertion method forces groundwater to be displaced above the water table and into the unsaturated filter pack of the well and the formation itself and because the overlying material may have different hydraulic properties than the water-bearing zone, it was recommended that the slug tests be conducted by removing water from the wells (i.e. rising head tests).

On February 3, 1999, rising head slug tests were conducted on the groundwater monitoring wells containing water, MW-1 and MW-4. The slug test data was analyzed using Hvorslev's Method, and the results are summarized below in Table 11. The highest hydraulic conductivity calculated was 6.5-cm/day. Further information concerning the analysis of the slug test data is presented in Appendix H.

Table 11. Summary of Estimated Hydraulic Conductivities

Monitoring Well	Hydraulic Conductivity (cm/day)
MW-1	**6.5**
MW-4	5.0

bold - indicates value used in Tier 2 calculations

All field equipment used to collect water level data was decontaminated prior to and between measurements to eliminate the potential for cross-contamination. Decontamination protocol consisted of a Alconox® soap and water wash and a triple distilled water rinse.

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C.6. Analytical Results and Cleanup Objectives in Tabular Format

The analytical results, Tier 1 cleanup objectives, contaminants of concern observed at concentrations in excess of the Tier 1 cleanup objectives, and requested Tier 2 cleanup objectives were provided in Section J of this report.

C.7. Laboratory Reports

Copies of the analytical laboratory reports are provided in Appendix A.

C.8. Soil Boring Logs

Soil boring logs developed during DAI's investigations are provided in Appendix G.

C.9. Soil Boring Logs

Monitoring well logs developed during DAI's investigations are provided in Appendix G.

C.10. Laboratory Certification

The laboratory certifications for the chemical and physical analysis of soil and groundwater samples are provided in Appendix F.

C.11. Professional Engineer Certification

The Professional Engineer Certification of the contents of this report is provided in Appendix I.

C.12. Site Maps

Figure 9 is a site map showing the soil sampling and monitoring well locations, extent of contamination above the Tier 1 SROs and GROs, and the location of the engineered barrier.

C.13. A Legal Description of the site and Plat of Survey

A Legal Description of the site and Plat of Survey showing the site boundaries is provided in Appendix J.

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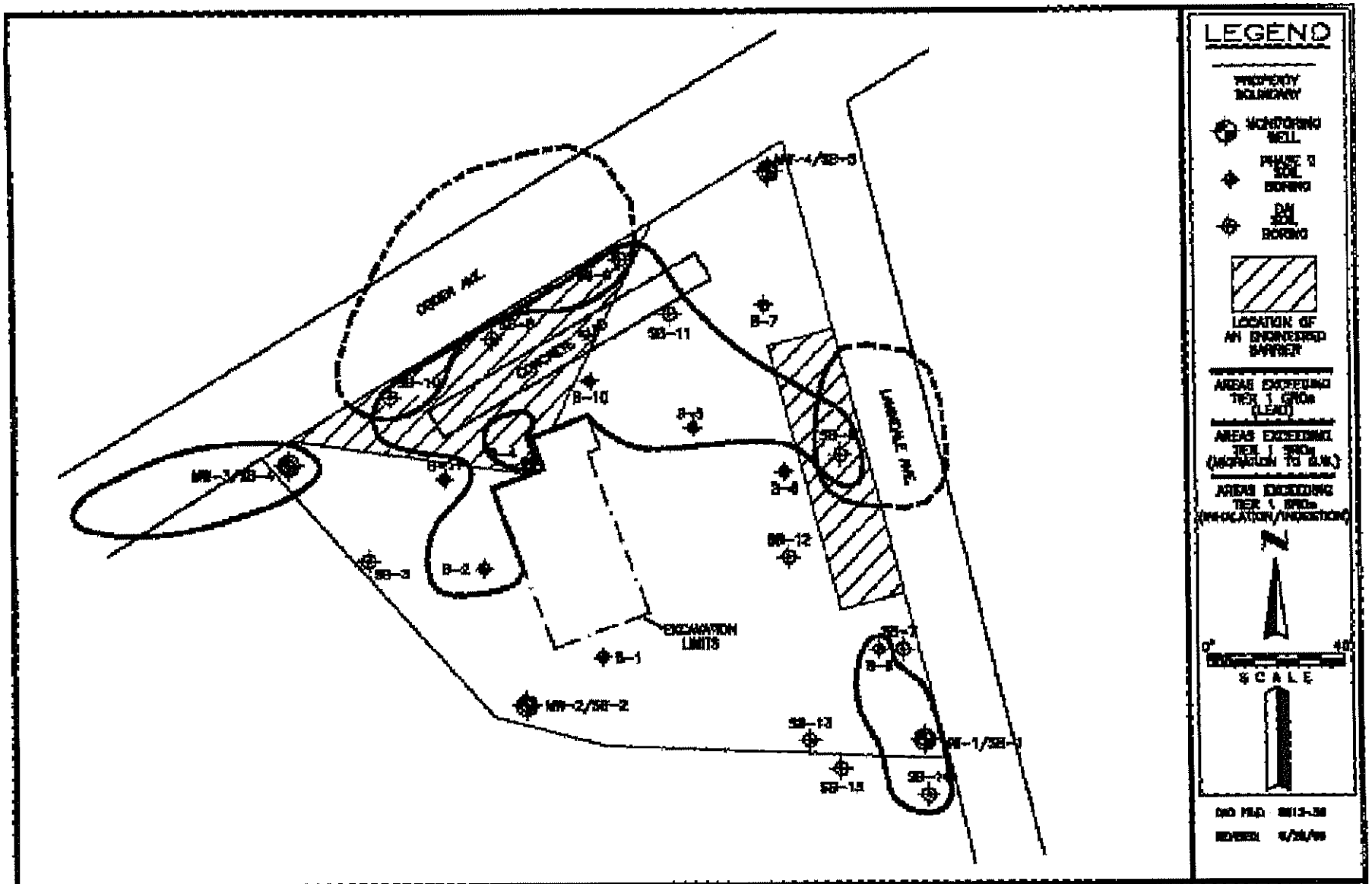

DAI ENVIRONMENTAL

MSC YARD 18
4226 SOUTH LAWNDALE AVE.
LYONS, IL

FIGURE 9
SOIL BORING AND MONITORING WELL LOCATIONS, EXTENT OF CONTAMINATION, AND AREA REQUIRING AN ENGINEERED BARRIER

C.14. The real estate tax index/parcel index number

The real estate tax index/parcel index number for the site is:18-02-207-004.

C.15. Photographs Documenting Corrective Action Activities

Photographs of the UST removal and soil excavation and disposal were submitted with the *45-Day Report*. Photographs of the engineered barrier will be submitted to the IEPA under separate cover after receipt of IEPA approval of the requested Tier 2 Remediation Objectives, and prior to issuance of the NFR Letter.

4.0 SUMMARY AND REQUEST FOR NFR

The groundwater ingestion exposure route has been eliminated by the Village of Lyons Ordinance No. 5-18-99-3. Tables 8 through 10 show that groundwater contamination and residual soil contamination migrating from soil to groundwater will have attenuated to levels below the Tier 1 GROs before encountering the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling. In addition, remaining soil contamination above the Tier 1 SROs for the soil inhalation and ingestion exposure pathways, based upon an industrial/commercial property classification, will be covered by an engineered barrier. Based upon this information, it is hereby requested that a No Further Remediation Letter be issued by the IEPA for this site.

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APPENDIX A
LABORATORY REPORTS

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AEA
LABORATORIES, INC.
DBA: AMERICAN-ATHENA LABORATORIES

LABORATORY DATA REPORT

CLIENT	DAI Environmental 5 Revere Drive Suite 310 NorthBrook, IL 60062

PROJECT	: MSC YARD 18 , LYONS
NUMBER#	: 6213
TASK ORDER	: N/A
ATTN	: DAN BRADFIELD
RECEIVED	: 02/03/99
REPORTED	: 02/10/99
FILE#	: 99000777 THRU 99000800

PROJECT SUMMARY:

Analyses were performed in accordance with the methods found in the USEPA publication: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition, December 1996. Specific method references are listed on the analytical report.

Results have been expressed on a "wet" weight (as received) basis.

All analyses were performed within established holding times, and all Quality Control criteria as outlined in the methods have been met.

LABORATORY DIRECTOR _____

6309 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524 • Tel.: 773-693-8030 • Fax: 773-693-8783 • 888-AEA-TEST • http://www.aealabs.com

INV#51738

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES
LABORATORY TESTING OF SOIL WATER AND HAZARDOUS WASTE
5809 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524
Tel.: 773-693-8030 Fax: 773-693-8783 888-AEA-TEST
Web: http://www.aeatest.com

CHAIN OF CUSTODY

Client: DAI Environmental	Project Name: MSC Yard 18, Lyons
Address: 5 Revere Drive, Suite 310	Sampler Name: D Bradfield
Northbrook, IL 60062	Project #: 6213
Report to: D Bradfield / D. Pitton	Time Period: (5 Day) 4 Day 3 Day 2 Day 1 Day <24Hr.
Phone #: 847-498-6910 Fax #: 6911	Date Needed:

	Field ID; Location	Matrix	Date Time	Type Cont.	# Cont.	Parameters Requested	AEA ID #
1	SB1-1	S	2-1-99 0800	3-A 2-D	5	VOC-5035, PNA, TOC, pH, TCLP-lead, Flashpoint, Bioassay	99000777
2	SB1-2	S	2-1-99 0840	3-A 2-D	4	received 6	99000778
3	SB1-3	S	2-1-99 0885	3-A 2-D	4	received 4	99000779
4	SB2-1	S	2-1-99 0920	3-A 2-D	5		99000780
5	SB2-2	S	2-1-99 0935	3A 2D	5		99000781
6	SB2-3	S	2-1-99 1010	3A 2D	5		99000782
7	SB3-2	S	2-1-99 1020	3A 2D	5		99000783
8	SB3-3	S	2-1-99 1035	3A 2D	5		99000784
9	SB4-1	S	2-1-99 1052	3A 2D	5		99000785
10	SB4-2	S	2-1-99 1100	3A 2D	5		99000786
11	SB4-3	S	2-1-99 1105	3A 2D	5		99000787
12	SB5-1	S	2-1-99 1120	3A 2D	5		99000788
13	SB5-2	S	2-1-99 1125	3A 2D	5		99000789
14	SB5-3	S	2-1-99 1132	3A 2D	5		99000790
15	SB6-1		2-1-99 1155				99000791

PLEASE FILL COMPLETELY

Sample Preserved: Y/N Condition of Sample(s): Good Violated
Preservative Type: Temp. of Container °C: 4°C

GLOSSARY:
MATRIX-Soil(S), Air(A), Water(W), Drinking Water(DW), Wipe(P), Other(O). A=Accept, R=Reject
CONTAINER-40ml Vial(A), 60ml Vial(B), 2oz(C), 4oz(D), 8oz(E), 1Liter(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W)
PRESERVATIVE-HCl, HNO3, H2SO4, NaOH, MeOH, Other(O). I=Ice N/A=Not Applicable

Relinquished by: [signature]	Date/Time: 2-2-99	Accepted by: [signature]
Relinquished by:	Date/Time: 915/AM	Accepted by:

Comments:

Page of

WHITE - OFFICE COPY YELLOW - LAB COPY PINK - CUSTOMER COPY

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES
LABORATORY TESTING OF SOIL WATER AND HAZARDOUS WASTE

8609 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524
Tel.: 773-693-8030 Fax: 773-693-8788 888-AEA-TEST
Web: http://www.aeatest.com

CHAIN OF CUSTODY

Client: DAI Environmental	Project Name: MSC Yard 18, Lyons
Address: 5 Revere Drive, Suite 310 Northbrook, IL 60062	Sampler Name: D Bradfield
	Project #: 6213
Report to: D. Bradfield / D. Patton	Time Period: (5 Day) 4 Day 3 Day 2 Day 1 Day <24Hr.
Phone #: 847-4986910 Fax #: 6911	Date Needed:

	Field ID; Location	Matrix	Date/Time	Type Cont.	# Cont.	Parameters Requested	AEA ID #
1	SB6-2	S	2-1-99 1300	3A 2D	5	VOC-5035 PNA Part Pb TOC, PH, TCLP Lead, Flash point	99000792
2	SB7-1	S	2-1-99 1335	3A 2D	5		99000793
3	SB7-2	S	2-1-99 1340	3A 2D	5		99000794
4	SB8-1	S	2-1-99 1410	3A 2D	5		99000795
5	SB8-2	S	2-1-99 1415	3A 2D	5		99000796
6	SB8-3	S	2-1-99 1416	3A 2D	5		99000797
7	SB9-1	S	2-1-99 1442	3A 2D	5		99000798
8	SB9-2	S	2-1-99 1445	3A 2D	5		99000799
9	SB9-3	S	2-1-99 1450	3A 2D	5		99000800
10							
11							
12							
13							
14							
15							

PLEASE FILL COMPLETELY

Sample Preserved: (Y) N	Condition of Sample(s): (Good) - Violated	GLOSSARY: MATRIX=Soil(S), Air(A), Water(W), Drinking Water(DW), Wipe(P), Other(O). A=Accept, R=Reject CONTAINER=40ml Vial(A), 60ml Vial(B), 2oz(C), 4oz(D), 8oz(E), 1Liter(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W) PRESERVATIVE=HCl, HNO3, H2SO4, NaOH, MeCl, Other(O). I=Ice. N/A=Not Applicable
Preservative Type:	Temp. of Container °C: 4	

Relinquished by: [signature]	Date/Time: 2-2-99	Accepted by: [signature]
Relinquished by:	Date/Time: 9:15 Am	Accepted by:
Comments:		

Page of

WHITE - OFFICE COPY YELLOW - LAB COPY PINK - CUSTOMER COPY

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00777	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 16, Lyo	Extracted: 02/03/99
Fax: (847) 498-8911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 21%			
Non-Carcinogenic PNA's				
Naphthalene	0.032	N.D.	64	*
Acenaphthene	0.053	N.D.	570	*
Anthracene	0.0412	N.D.	12,000	*
Fluoranthene	0.0348	0.112	3,100	*
Fluorene	0.0693	N.D.	560	*
Pyrene	0.0677	0.158	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0790	N.D.	–	
Benzo (ghi) perylene	0.0340	0.176	–	
Phenanthrene	0.0378	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0033	0.0821	2	*
Benzo (a) pyrene	0.005	0.143	8	*
Benzo (b) fluoranthene	0.0045	0.159	5	*
Benzo (k) fluoranthene	0.0043	0.112	49	*
Chrysene	0.004	0.0758	160	*
Dibenzo (a,h) anthracene	0.008	0.247	2	*
Indeno (1,2,3-cd) pyrene	0.0109	0.962	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

"*" Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta F.Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00778	Sampled: 02/01/99
6 Revere Dr., Suite 310	Field ID: SB-1-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyc	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 12%			
Non-Carcinogenic PNA's				
Napithalene	0.028	N.D.	84	*
Acenaphthene	0.047	N.D.	570	*
Anthracene	0.0368	N.D.	12,000	*
Fluoranthene	0.0312	0.0734	3,100	*
Fluorene	0.0829	N.D.	560	*
Pyrene	0.0805	0.0791	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0707	N.D.	–	
Benzo (ghi) perylene	0.0304	0.129	–	
Phenanthrene	0.0338	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0029	0.0418	2	*
Benzo (a) pyrene	0.005	0.0938	8	*
Benzo (b) fluoranthene	0.0041	0.0858	5	*
Benzo (k) fluoranthene	0.0038	0.0689	49	*
Chrysene	0.003	0.0395	160	*
Dibenzo (a,h) anthracene	0.007	0.188	2	*
Indeno (1,2,3-cd) pyrene	0.0097	0.642	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Ashinta P.Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00779	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 33%			
Non-Carcinogenic PNA's				
Naphthalene	0.037	N.D.	54	*
Acenaphthene	0.062	N.D.	570	*
Anthracene	0.0484	0.358	12,000	*
Fluoranthene	0.0409	2.82	3,100	*
Fluorene	0.0815	N.D.	560	*
Pyrene	0.0795	2.99	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0929	N.D.	—	
Benzo (ghi) perylene	0.0399	1.81	—	
Phenanthrene	0.0444	0.693	—	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0039	1.47	2	*
Benzo (a) pyrene	0.006	1.62	8	*
Benzo (b) fluoranthene	0.0053	1.99	5	*
Benzo (k) fluoranthene	0.0050	1.24	49	*
Chrysene	0.004	1.04	160	*
Dibenzo (a,h) anthracene	0.009	1.95	2	*
Indeno (1,2,3-cd) pyrene	0.0128	1.13	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.
" * " indicates that the ADL is less than or equal to the specified cleanup objectives.
^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Amrinta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00780	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-2-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 12%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.048	N.D.	570	*
Anthracene	0.0370	N.D.	12,000	*
Fluoranthene	0.0313	N.D.	3,100	*
Fluorene	0.0623	N.D.	560	*
Pyrene	0.0608	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0711	N.D.	—	
Benzo (ghi) perylene	0.0305	N.D.	—	
Phenanthrene	0.0339	N.D.	—	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0080	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0041	N.D.	5	*
Benzo (k) fluoranthene	0.0039	N.D.	49	*
Chrysene	0.003	N.D.	180	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0098	N.D.	14	*

Cleanup objectives are based upon ILEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

"*" indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00781	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-2-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 12%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.046	N.D.	570	*
Anthracene	0.0370	N.D.	12,000	*
Fluoranthene	0.0913	N.D.	3,100	*
Fluorene	0.0623	N.D.	560	*
Pyrene	0.0608	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0711	N.D.	--	
Benzo (ghi) perylene	0.0305	N.D.	--	
Phenanthrene	0.0330	N.D.	--	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0030	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0041	N.D.	5	*
Benzo (k) fluoranthene	0.0039	N.D.	49	*
Chrysene	0.003	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0098	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Paddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00782	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-3-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 10%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.047	N.D.	570	*
Anthracene	0.0364	N.D.	12,000	*
Fluoranthene	0.0308	N.D.	3,100	*
Fluorene	0.0613	N.D.	560	*
Pyrene	0.0598	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0899	N.D.	–	
Benzo (ghi) perylene	0.0300	N.D.	–	
Phenanthrene	0.0334	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0029	N.D.	2	*
Benzo (a) pyrene	0.004	N.D.	8	*
Benzo (b) fluoranthene	0.0040	N.D.	5	*
Benzo (k) fluoranthene	0.0038	N.D.	49	*
Chrysene	0.003	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0096	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 6, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00763	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-3-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 18%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	84	*
Acenaphthene	0.050	N.D.	570	*
Anthracene	0.0389	N.D.	12,000	*
Fluoranthene	0.0330	N.D.	3,100	*
Fluorene	0.0658	N.D.	560	*
Pyrene	0.0640	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0748	N.D.	–	
Benzo (ghi) perylene	0.0321	N.D.	–	
Phenanthrene	0.0357	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0031	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	6	*
Benzo (b) fluoranthene	0.0043	N.D.	5	*
Benzo (k) fluoranthene	0.0041	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0103	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00784	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-3-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/08/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 33%			
Non-Carcinogenic PNA's				
Naphthalene	0.037	N.D.	84	*
Acenaphthene	0.063	N.D.	570	*
Anthracene	0.0489	N.D.	12,000	*
Fluoranthene	0.0414	N.D.	3,100	*
Fluorene	0.0823	N.D.	560	*
Pyrene	0.0804	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0939	N.D.	–	
Benzo (ghi) perylene	0.0403	N.D.	–	
Phenanthrene	0.0448	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0039	N.D.	2	*
Benzo (a) pyrene	0.006	N.D.	8	*
Benzo (b) fluoranthene	0.0054	N.D.	5	*
Benzo (k) fluoranthene	0.0051	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.009	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0129	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.
* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.
^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Amrinta P.Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00785	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-4-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/05/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 32%			
Non-Carcinogenic PNA's				
Naphthalene	0.037	N.D.	84	*
Acenaphthene	0.062	N.D.	570	*
Anthracene	0.0481	N.D.	12,000	*
Fluoranthene	0.0407	N.D.	3,100	*
Fluorene	0.0610	N.D.	560	*
Pyrene	0.0791	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0923	N.D.	--	
Benzo (ghi) perylene	0.0397	N.D.	--	
Phenanthrene	0.0441	N.D.	--	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0038	N.D.	2	*
Benzo (a) pyrene	0.006	N.D.	8	*
Benzo (b) fluoranthene	0.0053	N.D.	5	*
Benzo (k) fluoranthene	0.0050	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.009	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0127	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
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DAI Environmental	Lab Number: AE00786	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-4-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 13%			
Non-Carcinogenic PNA's				
Naphthalene	0.029	N.D.	84	*
Acenaphthene	0.048	N.D.	570	*
Anthracene	0.0374	N.D.	12,000	*
Fluoranthene	0.0317	N.D.	3,100	*
Fluorene	0.0690	N.D.	560	*
Pyrene	0.0615	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0719	N.D.	–	
Benzo (ghi) perylene	0.0308	N.D.	–	
Phenanthrene	0.0343	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0030	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0041	N.D.	5	*
Benzo (k) fluoranthene	0.0039	N.D.	49	*
Chrysene	0.003	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0099	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

"*" indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00767
Field ID: SB-4-3
Client Project I.D: MGC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/06/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 14%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.049	N.D.	570	*
Anthracene	0.0380	N.D.	12,000	*
Fluoranthene	0.0322	N.D.	3,100	*
Fluorene	0.0640	N.D.	560	*
Pyrene	0.0625	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0790	N.D.	--	
Benzo (ghi) perylene	0.0314	N.D.	--	
Phenanthrene	0.0348	N.D.	--	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0030	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0042	N.D.	5	*
Benzo (k) fluoranthene	0.0040	N.D.	49	*
Chrysene	0.003	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0100	N.D.	14	*

Cleanup objectives are based upon ILEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00788	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/08/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 17%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	84	*
Acenaphthene	0.050	N.D.	570	*
Anthracene	0.0391	N.D.	12,000	*
Fluoranthene	0.0331	N.D.	3,100	*
Fluorene	0.0658	N.D.	560	*
Pyrene	0.0643	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0751	N.D.	–	
Benzo (ghi) perylene	0.0323	N.D.	–	
Phenanthrene	0.0359	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0031	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0043	N.D.	5	*
Benzo (k) fluoranthene	0.0041	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0103	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 6, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DAI Environmental	Lab Number: AE00789	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-8911	Analysis Method: EPA 8310	Analyzed: 02/08/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 16%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	84	*
Acenaphthene	0.050	N.D.	570	*
Anthracene	0.0368	N.D.	12,000	*
Fluoranthene	0.0328	N.D.	3,100	*
Fluorene	0.0653	N.D.	560	*
Pyrene	0.0637	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0744	N.D.	–	
Benzo (ghi) perylene	0.0320	N.D.	–	
Phenanthrene	0.0356	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0031	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0043	N.D.	5	*
Benzo (k) fluoranthene	0.0040	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0102	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

"*" indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
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DAI Environmental	Lab Number: AE00790	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 15%			
Non-Carcinogenic PNA's				
Naphthalene	0.029	N.D.	64	*
Acenaphthene	0.049	N.D.	570	*
Anthracene	0.0384	N.D.	12,000	*
Fluoranthene	0.0325	N.D.	3,100	*
Fluorene	0.0646	N.D.	560	*
Pyrene	0.0531	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0736	N.D.	–	
Benzo (ghi) perylene	0.0316	N.D.	–	
Phenanthrene	0.0352	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0031	N.D.	2	*
Benzo (a) pyrene	0.005	N.D.	8	*
Benzo (b) fluoranthene	0.0042	N.D.	5	*
Benzo (k) fluoranthene	0.0040	N.D.	49	*
Chrysene	0.004	N.D.	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0101	N.D.	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DAI Environmental	Lab Number: AE09791	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-6-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1 Cleanup Objective	IEPA Tier 1 Objectives Class 1 Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 10%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.047	N.D.	570	*
Anthracene	0.0383	1.74	12,000	*
Fluoranthene	0.0307	8.80	3,100	*
Fluorene	0.0811	N.D.	560	*
Pyrene	0.0587	8.21	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0097	N.D.	–	
Benzo (ghi) perylene	0.0380	1.25	–	
Phenanthrene	0.0393	4.58	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0029	3.56	2	*
Benzo (a) pyrene	0.004	2.28	8	*
Benzo (b) fluoranthene	0.0040	2.60	5	*
Benzo (k) fluoranthene	0.0038	1.72	49	*
Chrysene	0.003	2.46	160	*
Dibenzo (a,h) anthracene	0.007	1.79	2	*
Indeno (1,2,3-cd) pyrene	0.0096	12.50	14	*

Cleanup objectives are based upon ILEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00792
Field ID: SB-6-2
Client Project I.D: MSC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/06/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 18%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	64	*
Acenaphthene	0.051	N.D.	570	*
Anthracene	0.0395	2.24	12,000	*
Fluoranthene	0.0335	12.0	3,100	*
Fluorene	0.0665	N.D.	560	*
Pyrene	0.0650	11.1	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0759	N.D.	–	
Benzo (ghi) perylene	0.0926	1.64	–	
Phenanthrene	0.0362	6.17	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0032	4.60	2	*
Benzo (a) pyrene	0.005	2.71	8	*
Benzo (b) fluoranthene	0.0044	3.25	5	*
Benzo (k) fluoranthene	0.0041	2.16	49	*
Chrysene	0.004	3.18	160	*
Dibenzo (a,h) anthracene	0.007	2.74	2	*
Indeno (1,2,3-cd) pyrene	0.0104	13.9	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00793
Field ID: SB-7-1
Client Project I.D: MSC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/08/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 22%			
Non-Carcinogenic PNA's				
Naphthalene	0.032	N.D.	84	*
Acenaphthene	0.054	N.D.	570	*
Anthracene	0.0418	0.0449	12,000	*
Fluoranthene	0.0354	0.247	3,100	*
Fluorene	0.0704	N.D.	560	*
Pyrene	0.0667	0.295	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0803	N.D.	–	
Benzo (ghi) perylene	0.0345	0.229	–	
Phenanthrene	0.0383	0.196	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0039	0.150	2	*
Benzo (a) pyrene	0.005	0.164	8	*
Benzo (b) fluoranthene	0.0046	0.189	5	*
Benzo (k) fluoranthene	0.0044	0.206	49	*
Chrysene	0.004	0.0872	160	*
Dibenzo (a,h) anthracene	0.008	0.323	2	*
Indeno (1,2,3-cd) pyrene	0.0110	0.837	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

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DBA: AMERICAN ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00794	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-7-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1 Cleanup Objective	IEPA Tier 1 Objectives Class 1 Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 13%			
Non-Carcinogenic PNA's				
Naphthalene	0.029	N.D.	84	*
Acenaphthene	0.048	N.D.	570	*
Anthracene	0.0375	N.D.	12,000	*
Fluoranthene	0.0318	0.0771	3,100	*
Fluorene	0.0632	N.D.	560	*
Pyrene	0.0617	0.104	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0720	N.D.	–	
Benzo (ghi) perylene	0.0310	0.119	–	
Phenanthrene	0.0344	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0030	0.0552	2	*
Benzo (a) pyrene	0.005	0.120	8	*
Benzo (b) fluoranthene	0.0041	0.0967	5	*
Benzo (k) fluoranthene	0.0039	0.0680	48	*
Chrysene	0.003	0.0518	160	*
Dibenzo (a,h) anthracene	0.007	0.199	2	*
Indeno (1,2,3-cd) pyrene	0.0089	0.429	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

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DAI Environmental	Lab Number: AE00795	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-8-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 11%			
Non-Carcinogenic PNA's				
Naphthalene	0.028	N.D.	84	*
Acenaphthene	0.047	N.D.	570	*
Anthracene	0.0366	N.D.	12,000	*
Fluoranthene	0.0310	N.D.	3,100	*
Fluorene	0.0617	N.D.	560	*
Pyrene	0.0602	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0703	N.D.	–	
Benzo (ghi) perylene	0.0302	N.D.	–	
Phenanthrene	0.0336	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0029	0.0087	2	*
Benzo (a) pyrene	0.004	0.0056	8	*
Benzo (b) fluoranthene	0.0040	0.0056	5	*
Benzo (k) fluoranthene	0.0038	0.0056	49	*
Chrysene	0.003	0.0087	160	*
Dibenzo (a,h) anthracene	0.007	N.D.	2	*
Indeno (1,2,3-cd) pyrene	0.0097	N.D.	14	*

Cleanup objectives are based upon ILEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

" * " Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Armenta P.Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00796
Field ID: SB-6-2
Client Project I.D: MSC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/08/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 18%			
Non-Carcinogenic PNA's				
Naphthalene	0.031	N.D.	84	*
Acenaphthene	0.051	N.D.	570	*
Anthracene	0.0400	0.0874	12,000	*
Fluoranthene	0.0338	0.243	3,100	*
Fluorene	0.0673	N.D.	560	*
Pyrene	0.0657	0.235	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0767	N.D.	–	
Benzo (ghi) perylene	0.0330	0.0895	–	
Phenanthrene	0.0386	0.126	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0032	0.102	2	*
Benzo (a) pyrene	0.005	0.0907	8	*
Benzo (b) fluoranthene	0.0044	0.0968	5	*
Benzo (k) fluoranthene	0.0042	0.0850	49	*
Chrysene	0.004	0.0723	160	*
Dibenzo (a,h) anthracene	0.007	0.119	2	*
Indeno (1,2,3-cd) pyrene	0.0105	0.567	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.
" * " indicates that the ADL is less than or equal to the specified cleanup objectives.
^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Aminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00797	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-6-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/08/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^	Sample Results ^	IEPA Tier 1 Objectives Class 1: Cleanup Objective	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits
	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
	Moisture= 18%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	84	*
Acenaphthene	0.051	N.D.	570	*
Anthracene	0.0396	0.208	12,000	*
Fluoranthene	0.0335	0.952	3,100	*
Fluorene	0.0686	N.D.	560	*
Pyrene	0.0650	0.915	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0760	N.D.	–	
Benzo (ghi) perylene	0.0326	0.187	–	
Phenanthrene	0.0363	0.475	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0032	0.411	2	*
Benzo (a) pyrene	0.005	0.275	8	*
Benzo (b) fluoranthene	0.0044	0.359	5	*
Benzo (k) fluoranthene	0.0041	0.205	49	*
Chrysene	0.004	0.312	160	*
Dibenzo (a,h) anthracene	0.007	0.218	2	*
Indeno (1,2,3-cd) pyrene	0.0104	1.75	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00796	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-8-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyo	Extracted: 02/03/99
Fax: (847) 498-6911	Analysis Method: EPA 8310	Analyzed: 02/06/99
Att: Dan Bradfield	Sample Descript: Soil	Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit* mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 14%			
Non-Carcinogenic PNA's				
Naphthalene	0.029	0.328	84	*
Acenaphthene	0.049	0.158	570	*
Anthracene	0.0378	N.D.	12,000	*
Fluoranthene	0.0320	N.D.	3,100	*
Fluorene	0.0837	N.D.	560	*
Pyrene	0.0822	N.D.	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0726	0.281	–	
Benzo (ghi) perylene	0.0312	N.D.	–	
Phenanthrene	0.0347	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0030	0.0209	2	*
Benzo (a) pyrene	0.005	0.0220	6	*
Benzo (b) fluoranthene	0.0042	0.0174	6	*
Benzo (k) fluoranthene	0.0039	0.0128	49	*
Chrysene	0.003	0.0139	160	*
Dibenzo (a,h) anthracene	0.007	0.0081	2	*
Indeno (1,2,3-cd) pyrene	0.0100	0.0360	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

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^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00799
Field ID: SB-9-2
Client Project I.D: MSC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/06/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 8%			
Non-Carcinogenic PNA's				
Naphthalene	0.027	0.514	84	*
Acenaphthene	0.045	0.646	570	*
Anthracene	0.0352	0.0368	12,000	*
Fluoranthene	0.0298	0.786	3,100	*
Fluorene	0.0594	0.445	560	*
Pyrene	0.0579	0.559	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0677	0.832	–	
Benzo (ghi) perylene	0.0291	0.423	–	
Phenanthrene	0.0323	0.371	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0028	0.418	2	*
Benzo (a) pyrene	0.004	0.248	8	*
Benzo (b) fluoranthene	0.0039	0.297	5	*
Benzo (k) fluoranthene	0.0037	0.395	49	*
Chrysene	0.003	0.141	160	*
Dibenzo (a,h) anthracene	0.006	1.35	2	*
Indeno (1,2,3-cd) pyrene	0.0093	1.50	14	*

Cleanup objectives are based upon ILEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

* * * Indicates that the ADL is less than or equal to the specified cleanup objectives.

^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA LABORATORIES, INC.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00800
Field ID: SB-9-3
Client Project I.D: MSC Yard 18, Lyo
Analysis Method: EPA 8310
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/03/99
Analyzed: 02/05/99
Reported: 02/10/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit^ mg/kg (ppm)	Sample Results ^ mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Cleanup Objective mg/kg (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/kg (ppm)
	Moisture= 16%			
Non-Carcinogenic PNA's				
Naphthalene	0.030	N.D.	84	*
Acenaphthene	0.050	N.D.	570	*
Anthracene	0.0389	N.D.	12,000	*
Fluoranthene	0.0330	0.060	3,100	*
Fluorene	0.0858	N.D.	560	*
Pyrene	0.0640	0.093	2,300	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.0748	N.D.	–	
Benzo (ghi) perylene	0.0321	0.116	–	
Phenanthrene	0.0357	N.D.	–	
Carcinogenic PNA's				
Benzo (a) anthracene	0.0031	0.0514	2	*
Benzo (a) pyrene	0.005	0.0836	5	*
Benzo (b) fluoranthene	0.0043	0.0836	5	*
Benzo (k) fluoranthene	0.0041	0.0845	49	*
Chrysene	0.004	0.0442	160	*
Dibenzo (a,h) anthracene	0.007	0.143	2	*
Indeno (1,2,3-cd) pyrene	0.0103	0.594	14	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.

Analytes reported as N.D. were not present above the stated limit of detection.

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^ all results calculated on dry weight basis.

AEA Laboratories, Inc.

Laboratory Director
Arminta F.Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00777
Field ID: SB-1-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 21%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	63.1	N.D.
Benzene	12.6	N.D.
Bromobenzene	12.6	N.D.
Bromodichloromethane	12.6	N.D.
n-Butylbenzene	12.6	N.D.
sec-Butylbenzene	12.6	N.D.
tert-Butylbenzene	12.6	N.D.
Bromochloromethane	12.6	N.D.
Bromomethane	12.6	N.D.
Bromoform	12.6	N.D.
2-Butanone	25.3	N.D.
Carbondisulfide	12.6	N.D.
Carbon tetrachloride	25.3	N.D.
Chlorobenzene	12.6	N.D.
Chloroethane	12.6	N.D.
Chloroform	12.6	N.D.
Chloromethane	12.6	N.D.
2-Chlorotoluene	12.6	N.D.
4-Chlorotoluene	12.6	N.D.
2-Chloroethyl vinyl ether	12.6	N.D.
Dibromochloromethane	12.6	N.D.
Dichlorodifluoromethane	12.6	N.D.
Dibromomethane	12.6	N.D.
1,2-Dibromoethane	12.6	N.D.
1,2-Dibromo-3-chloropropane	12.6	N.D.
1,3-Dichlorobenzene	12.6	N.D.
1,2-Dichlorobenzene	12.6	N.D.
1,4-Dichlorobenzene	12.6	N.D.
1,1-Dichloroethane	12.6	N.D.
1,2-Dichloroethane	12.6	N.D.
1,1-Dichloroethene	12.6	N.D.
cis-1,2-Dichloroethene	12.6	N.D.
trans-1,2-Dichloroethene	12.6	N.D.
1,2-Dichloropropane	12.6	N.D.
1,3-Dichloropropane	12.6	N.D.
2,2-Dichloropropane	12.6	N.D.

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AEA LABORATORIES, INC.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00777
Field ID: SB-1-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.6	N.D.
trans 1,3-Dichloropropene	12.6	N.D.
1,1-Dichloropropene	12.6	N.D.
Ethyl Benzene	12.6	N.D.
2-Hexanone	25.3	N.D.
Hexachlorobutadiene	12.6	N.D.
Methylene chloride	12.6	N.D.
4-methyl-2-pentanone	12.6	N.D.
Styrene	12.6	N.D.
Tetrachloroethene	25.3	N.D.
Toluene	12.6	N.D.
1,1,2,2-Tetrachloroethane	25.3	N.D.
1,1,1-Trichloroethane	12.6	N.D.
1,1,2-Trichloroethane	12.6	N.D.
Trichloroethene	12.6	N.D.
Trichlorofluoromethane	12.6	N.D.
1,1,1,2-Tetrachloroethane	12.6	N.D.
1,2,3-Trichloropropane	12.6	N.D.
1,2,4-Trimethylbenzene	12.6	N.D.
1,3,5-Trimethylbenzene	12.6	N.D.
1,2,3-Trichlorobenzene	12.6	N.D.
1,2,4-Trichlorobenzene	12.6	N.D.
Isopropylbenzene	12.6	N.D.
p-Isopropyltoluene	12.6	N.D.
n-Propylbenzene	12.6	N.D.
Napthalene	12.6	N.D.
Vinyl Acetate	25.3	N.D.
Vinyl chloride	12.6	N.D.
Total Xylenes	12.6	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental	Lab Number: AE00778	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-06/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 12%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	56.5	N.D.
Benzene	11.3	N.D.
Bromobenzene	11.3	N.D.
Bromodichloromethane	11.3	N.D.
n-Butylbenzene	11.3	N.D.
sec-Butylbenzene	11.3	N.D.
tert-Butylbenzene	11.3	N.D.
Bromochloromethane	11.3	N.D.
Bromomethane	11.3	N.D.
Bromoform	11.3	N.D.
2-Butanone	22.6	N.D.
Carbondisulfide	11.3	N.D.
Carbon tetrachloride	22.6	N.D.
Chlorobenzene	11.3	N.D.
Chloroethane	11.3	N.D.
Chloroform	11.3	N.D.
Chloromethane	11.3	N.D.
2-Chlorotoluene	11.3	N.D.
4-Chlorotoluene	11.3	N.D.
2-Chloroethyl vinyl ether	11.3	N.D.
Dibromochloromethane	11.3	N.D.
Dichlorodifluoromethane	11.3	N.D.
Dibromomethane	11.3	N.D.
1,2-Dibromoethane	11.3	N.D.
1,2-Dibromo-3-chloropropane	11.3	N.D.
1,3-Dichlorobenzene	11.3	N.D.
1,2-Dichlorobenzene	11.3	N.D.
1,4-Dichlorobenzene	11.3	N.D.
1,1-Dichloroethane	11.3	N.D.
1,2-Dichloroethane	11.3	N.D.
1,1-Dichloroethene	11.3	N.D.
cis-1,2-Dichloroethene	11.3	N.D.
trans-1,2-Dichloroethene	11.3	N.D.
1,2-Dichloropropane	11.3	N.D.
1,3-Dichloropropane	11.3	N.D.
2,2-Dichloropropane	11.3	N.D.

AEA LABORATORIES, INC.

BAI Environmental	Lab Number: AE00778	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.3	N.D.
trans 1,3-Dichloropropene	11.3	N.D.
1,1-Dichloropropene	11.3	N.D.
Ethyl Benzene	11.3	N.D.
2-Hexanone	22.6	N.D.
Hexachlorobutadiene	11.3	N.D.
Methylene chloride	11.3	N.D.
4-methyl-2-pentanone	11.3	N.D.
Styrene	11.3	N.D.
Tetrachloroethene	22.6	N.D.
Toluene	11.3	N.D.
1,1,2,2-Tetrachloroethane	22.6	N.D.
1,1,1-Trichloroethane	11.3	N.D.
1,1,2-Trichloroethane	11.3	N.D.
Trichloroethene	11.3	N.D.
Trichlorofluoromethane	11.3	N.D.
1,1,1,2-Tetrachloroethane	11.3	N.D.
1,2,3-Trichloropropane	11.3	N.D.
1,2,4-Trimethylbenzene	11.3	N.D.
1,3,5-Trimethylbenzene	11.3	N.D.
1,2,3-Trichlorobenzene	11.3	N.D.
1,2,4-Trichlorobenzene	11.3	225
Isopropylbenzene	11.3	N.D.
p-Isopropyltoluene	11.3	N.D.
n-Propylbenzene	11.3	N.D.
Naphthalene	11.3	1830
Vinyl Acetate	22.6	N.D.
Vinyl chloride	11.3	N.D.
Total Xylenes	11.3	94

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

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Att: Dan Bradfield

Lab Number: AE00779
Field ID: SB-1-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 33%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	74.2	N.D.
Benzene	14.8	N.D.
Bromobenzene	14.8	N.D.
Bromodichloromethane	14.8	N.D.
n-Butylbenzene	14.8	N.D.
sec-Butylbenzene	14.8	N.D.
tert-Butylbenzene	14.8	N.D.
Bromochloromethane	14.8	N.D.
Bromomethane	14.8	N.D.
Bromoform	14.8	N.D.
2-Butanone	29.7	N.D.
Carbondisulfide	14.8	N.D.
Carbon tetrachloride	29.7	N.D.
Chlorobenzene	14.8	N.D.
Chloroethane	14.8	N.D.
Chloroform	14.8	N.D.
Chloromethane	14.8	N.D.
2-Chlorotoluene	14.8	N.D.
4-Chlorotoluene	14.8	N.D.
2-Chloroethyl vinyl ether	14.8	N.D.
Dibromochloromethane	14.8	N.D.
Dichlorodifluoromethane	14.8	N.D.
Dibromomethane	14.8	N.D.
1,2-Dibromoethane	14.8	N.D.
1,2-Dibromo-3-chloropropane	14.8	N.D.
1,3-Dichlorobenzene	14.8	N.D.
1,2-Dichlorobenzene	14.8	N.D.
1,4-Dichlorobenzene	14.8	N.D.
1,1-Dichloroethane	14.8	N.D.
1,2-Dichloroethane	14.8	N.D.
1,1-Dichloroethene	14.8	N.D.
cis-1,2-Dichloroethene	14.8	N.D.
trans-1,2-Dichloroethene	14.8	N.D.
1,2-Dichloropropane	14.8	N.D.
1,3-Dichloropropane	14.8	N.D.
2,2-Dichloropropane	14.8	N.D.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00779
Field ID: SB-1-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	14.8	N.D.
trans 1,3-Dichloropropene	14.8	N.D.
1,1-Dichloropropene	14.8	N.D.
Ethyl Benzene	14.8	N.D.
2-Hexanone	29.7	N.D.
Hexachlorobutadiene	14.8	N.D.
Methylene chloride	14.8	N.D.
4-methyl-2-pentanone	14.8	N.D.
Styrene	14.8	N.D.
Tetrachloroethene	29.7	N.D.
Toluene	14.8	N.D.
1,1,2,2-Tetrachloroethane	29.7	N.D.
1,1,1-Trichloroethane	14.8	N.D.
1,1,2-Trichloroethane	14.8	N.D.
Trichloroethene	14.8	N.D.
Trichlorofluoromethane	14.8	N.D.
1,1,1,2-Tetrachloroethane	14.8	N.D.
1,2,3-Trichloropropane	14.8	N.D.
1,2,4-Trimethylbenzene	14.8	N.D.
1,3,5-Trimethylbenzene	14.8	N.D.
1,2,3-Trichlorobenzene	14.8	N.D.
1,2,4-Trichlorobenzene	14.8	N.D.
Isopropylbenzene	14.8	N.D.
p-Isopropyltoluene	14.8	N.D.
n-Propylbenzene	14.8	N.D.
Napthalene	14.8	N.D.
Vinyl Acetate	29.7	N.D.
Vinyl chloride	14.8	N.D.
Total Xylenes	14.8	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Aminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 499-6911
Att: Dan Bradfield

Lab Number: AE00780
Field ID: SB-2-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 12%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	56.8	N.D.
Benzene	11.4	N.D.
Bromobenzene	11.4	N.D.
Bromodichloromethane	11.4	N.D.
n-Butylbenzene	11.4	N.D.
sec-Butylbenzene	11.4	N.D.
tert-Butylbenzene	11.4	N.D.
Bromochloromethane	11.4	N.D.
Bromomethane	11.4	N.D.
Bromoform	11.4	N.D.
2-Butanone	22.7	N.D.
Carbondisulfide	11.4	N.D.
Carbon tetrachloride	22.7	N.D.
Chlorobenzene	11.4	N.D.
Chloroethane	11.4	N.D.
Chloroform	11.4	N.D.
Chloromethane	11.4	N.D.
2-Chlorotoluene	11.4	N.D.
4-Chlorotoluene	11.4	N.D.
2-Chloroethyl vinyl ether	11.4	N.D.
Dibromochloromethane	11.4	N.D.
Dichlorodifluoromethane	11.4	N.D.
Dibromomethane	11.4	N.D.
1,2-Dibromoethane	11.4	N.D.
1,2-Dibromo-3-chloropropane	11.4	N.D.
1,3-Dichlorobenzene	11.4	N.D.
1,2-Dichlorobenzene	11.4	N.D.
1,4-Dichlorobenzene	11.4	N.D.
1,1-Dichloroethane	11.4	N.D.
1,2-Dichloroethane	11.4	N.D.
1,1-Dichloroethene	11.4	N.D.
cis-1,2-Dichloroethene	11.4	N.D.
trans-1,2-Dichloroethene	11.4	N.D.
1,2-Dichloropropane	11.4	N.D.
1,3-Dichloropropane	11.4	N.D.
2,2-Dichloropropane	11.4	N.D.

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Lab Number: AE00780
Field ID: SB-2-1
Client Project I.D: MSC Yard 16, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.4	N.D.
trans 1,3-Dichloropropene	11.4	N.D.
1,1-Dichloropropene	11.4	N.D.
Ethyl Benzene	11.4	N.D.
2-Hexanone	22.7	N.D.
Hexachlorobutadiene	11.4	N.D.
Methylene chloride	11.4	N.D.
4-methyl-2-pentanone	11.4	N.D.
Styrene	11.4	N.D.
Tetrachloroethane	22.7	N.D.
Toluene	11.4	N.D.
1,1,2,2-Tetrachloroethane	22.7	N.D.
1,1,1-Trichloroethane	11.4	N.D.
1,1,2-Trichloroethane	11.4	N.D.
Trichloroethene	11.4	N.D.
Trichlorofluoromethane	11.4	N.D.
1,1,1,2-Tetrachloroethane	11.4	N.D.
1,2,3-Trichloropropane	11.4	N.D.
1,2,4-Trimethylbenzene	11.4	N.D.
1,3,5-Trimethylbenzene	11.4	N.D.
1,2,3-Trichlorobenzene	11.4	N.D.
1,2,4-Trichlorobenzene	11.4	N.D.
Isopropylbenzene	11.4	N.D.
p-Isopropyltoluene	11.4	N.D.
n-Propylbenzene	11.4	N.D.
Napthalene	11.4	N.D.
Vinyl Acetate	22.7	N.D.
Vinyl chloride	11.4	N.D.
Total Xylenes	11.4	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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DBA: AMERICAN-ATHENA LABORATORIES

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Lab Number: AE00781
Field ID: SB-2-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 12%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	56.8	N.D.
Benzene	11.4	N.D.
Bromobenzene	11.4	N.D.
Bromodichloromethane	11.4	N.D.
n-Butylbenzene	11.4	N.D.
sec-Butylbenzene	11.4	N.D.
tert-Butylbenzene	11.4	N.D.
Bromochloromethane	11.4	N.D.
Bromomethane	11.4	N.D.
Bromoform	11.4	N.D.
2-Butanone	22.7	N.D.
Carbondisulfide	11.4	N.D.
Carbon tetrachloride	22.7	N.D.
Chlorobenzene	11.4	N.D.
Chloroethane	11.4	N.D.
Chloroform	11.4	N.D.
Chloromethane	11.4	N.D.
2-Chlorotoluene	11.4	N.D.
4-Chlorotoluene	11.4	N.D.
2-Chloroethyl vinyl ether	11.4	N.D.
Dibromochloromethane	11.4	N.D.
Dichlorodifluoromethane	11.4	N.D.
Dibromomethane	11.4	N.D.
1,2-Dibromoethane	11.4	N.D.
1,2-Dibromo-3-chloropropane	11.4	N.D.
1,3-Dichlorobenzene	11.4	N.D.
1,2-Dichlorobenzene	11.4	N.D.
1,4-Dichlorobenzene	11.4	N.D.
1,1-Dichloroethane	11.4	N.D.
1,2-Dichloroethane	11.4	N.D.
1,1-Dichloroethene	11.4	N.D.
cis-1,2-Dichloroethene	11.4	N.D.
trans-1,2-Dichloroethene	11.4	N.D.
1,2-Dichloropropane	11.4	N.D.
1,3-Dichloropropane	11.4	N.D.
2,2-Dichloropropane	11.4	N.D.

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Lab Number: AE00781
Field ID: SB-2-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.4	N.D.
trans 1,3-Dichloropropene	11.4	N.D.
1,1-Dichloropropene	11.4	N.D.
Ethyl Benzene	11.4	N.D.
2-Hexanone	22.7	N.D.
Hexachlorobutadiene	11.4	N.D.
Methylene chloride	11.4	N.D.
4-methyl-2-pentanone	11.4	N.D.
Styrene	11.4	N.D.
Tetrachloroethene	22.7	N.D.
Toluene	11.4	N.D.
1,1,2,2-Tetrachloroethane	22.7	N.D.
1,1,1-Trichloroethane	11.4	N.D.
1,1,2-Trichloroethane	11.4	N.D.
Trichloroethene	11.4	N.D.
Trichlorofluoromethane	11.4	N.D.
1,1,1,2-Tetrachloroethane	11.4	N.D.
1,2,3-Trichloropropane	11.4	N.D.
1,2,4-Trimethylbenzene	11.4	N.D.
1,3,5-Trimethylbenzene	11.4	N.D.
1,2,3-Trichlorobenzene	11.4	N.D.
1,2,4-Trichlorobenzene	11.4	N.D.
Isopropylbenzene	11.4	N.D.
p-Isopropyltoluene	11.4	N.D.
n-Propylbenzene	11.4	N.D.
Napthalene	11.4	N.D.
Vinyl Acetate	22.7	N.D.
Vinyl chloride	11.4	N.D.
Total Xylenes	11.4	52.7

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

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DBA: AMERICAN ATHENA LABORATORIES

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Att: Dan Bradfield

Lab Number: AE00782
Field ID: SB-3-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 10%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	55.8	N.D.
Benzene	11.2	N.D.
Bromobenzene	11.2	N.D.
Bromodichloromethane	11.2	N.D.
n-Butylbenzene	11.2	N.D.
sec-Butylbenzene	11.2	N.D.
tert-Butylbenzene	11.2	N.D.
Bromochloromethane	11.2	N.D.
Bromomethane	11.2	N.D.
Bromoform	11.2	N.D.
2-Butanone	22.3	N.D.
Carbondisulfide	11.2	N.D.
Carbon tetrachloride	22.3	N.D.
Chlorobenzene	11.2	N.D.
Chloroethane	11.2	N.D.
Chloroform	11.2	N.D.
Chloromethane	11.2	N.D.
2-Chlorotoluene	11.2	N.D.
4-Chlorotoluene	11.2	N.D.
2-Chloroethyl vinyl ether	11.2	N.D.
Dibromochloromethane	11.2	N.D.
Dichlorodifluoromethane	11.2	N.D.
Dibromomethane	11.2	N.D.
1,2-Dibromoethane	11.2	N.D.
1,2-Dibromo-3-chloropropane	11.2	N.D.
1,3-Dichlorobenzene	11.2	N.D.
1,2-Dichlorobenzene	11.2	N.D.
1,4-Dichlorobenzene	11.2	N.D.
1,1-Dichloroethane	11.2	N.D.
1,2-Dichloroethane	11.2	N.D.
1,1-Dichloroethene	11.2	N.D.
cis-1,2-Dichloroethene	11.2	N.D.
trans-1,2-Dichloroethene	11.2	N.D.
1,2-Dichloropropane	11.2	N.D.
1,3-Dichloropropane	11.2	N.D.
2,2-Dichloropropane	11.2	N.D.

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Lab Number: AE00782
Field ID: SB-3-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.2	N.D.
trans 1,3-Dichloropropene	11.2	N.D.
1,1-Dichloropropene	11.2	N.D.
Ethyl Benzene	11.2	N.D.
2-Hexanone	22.3	N.D.
Hexachlorobutadiene	11.2	N.D.
Methylene chloride	11.2	N.D.
4-methyl-2-pentanone	11.2	N.D.
Styrene	11.2	N.D.
Tetrachloroethene	22.3	N.D.
Toluene	11.2	N.D.
1,1,2,2-Tetrachloroethane	22.3	N.D.
1,1,1-Trichloroethane	11.2	N.D.
1,1,2-Trichloroethane	11.2	N.D.
Trichloroethene	11.2	N.D.
Trichlorofluoromethane	11.2	N.D.
1,1,1,2-Tetrachloroethane	11.2	N.D.
1,2,3-Trichloropropane	11.2	N.D.
1,2,4-Trimethylbenzene	11.2	N.D.
1,3,5-Trimethylbenzene	11.2	N.D.
1,2,3-Trichlorobenzene	11.2	N.D.
1,2,4-Trichlorobenzene	11.2	N.D.
Isopropylbenzene	11.2	N.D.
p-Isopropyltoluene	11.2	N.D.
n-Propylbenzene	11.2	N.D.
Napthalene	11.2	N.D.
Vinyl Acetate	22.3	N.D.
Vinyl chloride	11.2	N.D.
Total Xylenes	11.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

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DBA: AMERICAN-ATHENA LABORATORIES

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Lab Number: AE00783
Field ID: SB-3-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 18%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	59.7	N.D.
Benzene	11.9	N.D.
Bromobenzene	11.9	N.D.
Bromodichloromethane	11.9	N.D.
n-Butylbenzene	11.9	N.D.
sec-Butylbenzene	11.9	N.D.
tert-Butylbenzene	11.9	N.D.
Bromochloromethane	11.9	N.D.
Bromomethane	11.9	N.D.
Bromoform	11.9	N.D.
2-Butanone	23.9	N.D.
Carbondisulfide	11.9	N.D.
Carbon tetrachloride	23.9	N.D.
Chlorobenzene	11.9	N.D.
Chloroethane	11.9	N.D.
Chloroform	11.9	N.D.
Chloromethane	11.9	N.D.
2-Chlorotoluene	11.9	N.D.
4-Chlorotoluene	11.9	N.D.
2-Chloroethyl vinyl ether	11.9	N.D.
Dibromochloromethane	11.9	N.D.
Dichlorodifluoromethane	11.9	N.D.
Dibromomethane	11.9	N.D.
1,2-Dibromoethane	11.9	N.D.
1,2-Dibromo-3-chloropropane	11.9	N.D.
1,3-Dichlorobenzene	11.9	N.D.
1,2-Dichlorobenzene	11.9	N.D.
1,4-Dichlorobenzene	11.9	N.D.
1,1-Dichloroethane	11.9	N.D.
1,2-Dichloroethane	11.9	N.D.
1,1-Dichloroethene	11.9	N.D.
cis-1,2-Dichloroethene	11.9	N.D.
trans-1,2-Dichloroethene	11.9	N.D.
1,2-Dichloropropane	11.9	N.D.
1,3-Dichloropropane	11.9	N.D.
2,2-Dichloropropane	11.9	N.D.

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Lab Number: AE00783
Field ID: SB-3-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.9	N.D.
trans 1,3-Dichloropropene	11.9	N.D.
1,1-Dichloropropene	11.9	N.D.
Ethyl Benzene	11.9	N.D.
2-Hexanone	23.9	N.D.
Hexachlorobutadiene	11.9	N.D.
Methylene chloride	11.9	N.D.
4-methyl-2-pentanone	11.9	N.D.
Styrene	11.9	N.D.
Tetrachloroethene	23.9	N.D.
Toluene	11.9	N.D.
1,1,2,2-Tetrachloroethane	23.9	N.D.
1,1,1-Trichloroethane	11.9	N.D.
1,1,2-Trichloroethane	11.9	N.D.
Trichloroethene	11.9	N.D.
Trichlorofluoromethane	11.9	N.D.
1,1,1,2-Tetrachloroethane	11.9	N.D.
1,2,3-Trichloropropane	11.9	N.D.
1,2,4-Trimethylbenzene	11.9	N.D.
1,3,5-Trimethylbenzene	11.9	N.D.
1,2,3-Trichlorobenzene	11.9	N.D.
1,2,4-Trichlorobenzene	11.9	N.D.
Isopropylbenzene	11.9	N.D.
p-Isopropyltoluene	11.9	N.D.
n-Propylbenzene	11.9	N.D.
Napthalene	11.9	N.D.
Vinyl Acetate	23.9	N.D.
Vinyl chloride	11.9	N.D.
Total Xylenes	11.9	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
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Lab Number: AE00784
Field ID: SB-3-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 33%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	75.0	N.D.
Benzene	15.0	N.D.
Bromobenzene	15.0	N.D.
Bromodichloromethane	15.0	N.D.
n-Butylbenzene	15.0	N.D.
sec-Butylbenzene	15.0	N.D.
tert-Butylbenzene	15.0	N.D.
Bromochloromethane	15.0	N.D.
Bromomethane	15.0	N.D.
Bromoform	15.0	N.D.
2-Butanone	30.0	N.D.
Carbondisulfide	15.0	N.D.
Carbon tetrachloride	30.0	N.D.
Chlorobenzene	15.0	N.D.
Chloroethane	15.0	N.D.
Chloroform	15.0	N.D.
Chloromethane	15.0	N.D.
2-Chlorotoluene	15.0	N.D.
4-Chlorotoluene	15.0	N.D.
2-Chloroethyl vinyl ether	15.0	N.D.
Dibromochloromethane	15.0	N.D.
Dichlorodifluoromethane	15.0	N.D.
Dibromomethane	15.0	N.D.
1,2-Dibromoethane	15.0	N.D.
1,2-Dibromo-3-chloropropane	15.0	N.D.
1,3-Dichlorobenzene	15.0	N.D.
1,2-Dichlorobenzene	15.0	N.D.
1,4-Dichlorobenzene	15.0	N.D.
1,1-Dichloroethane	15.0	N.D.
1,2-Dichloroethane	15.0	N.D.
1,1-Dichloroethene	15.0	N.D.
cis-1,2-Dichloroethene	15.0	N.D.
trans-1,2-Dichloroethene	15.0	N.D.
1,2-Dichloropropane	15.0	N.D.
1,3-Dichloropropane	15.0	N.D.
2,2-Dichloropropane	15.0	N.D.

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Lab Number: AE00784
Field ID: SB-3-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	15.0	N.D.
trans 1,3-Dichloropropene	15.0	N.D.
1,1-Dichloropropene	15.0	N.D.
Ethyl Benzene	15.0	N.D.
2-Hexanone	30.0	N.D.
Hexachlorobutadiene	15.0	N.D.
Methylene chloride	15.0	N.D.
4-methyl-2-pentanone	15.0	N.D.
Styrene	15.0	N.D.
Tetrachloroethene	30.0	N.D.
Toluene	15.0	N.D.
1,1,2,2-Tetrachloroethane	30.0	N.D.
1,1,1-Trichloroethane	15.0	N.D.
1,1,2-Trichloroethane	15.0	N.D.
Trichloroethene	15.0	N.D.
Trichlorofluoromethane	15.0	N.D.
1,1,1,2-Tetrachloroethane	15.0	N.D.
1,2,3-Trichloropropane	15.0	N.D.
1,2,4-Trimethylbenzene	15.0	N.D.
1,3,5-Trimethylbenzene	15.0	N.D.
1,2,3-Trichlorobenzene	15.0	N.D.
1,2,4-Trichlorobenzene	15.0	N.D.
Isopropylbenzene	15.0	N.D.
p-Isopropyltoluene	15.0	N.D.
n-Propylbenzene	15.0	N.D.
Napthalene	15.0	N.D.
Vinyl Acetate	30.0	N.D.
Vinyl chloride	15.0	N.D.
Total Xylenes	15.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00785
Field ID: SB-4-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 32%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	73.7	N.D.
Benzene	14.7	N.D.
Bromobenzene	14.7	N.D.
Bromodichloromethane	14.7	N.D.
n-Butylbenzene	14.7	N.D.
sec-Butylbenzene	14.7	N.D.
tert-Butylbenzene	14.7	N.D.
Bromochloromethane	14.7	N.D.
Bromomethane	14.7	N.D.
Bromoform	14.7	N.D.
2-Butanone	29.5	N.D.
Carbondisulfide	14.7	N.D.
Carbon tetrachloride	29.5	N.D.
Chlorobenzene	14.7	N.D.
Chloroethane	14.7	N.D.
Chloroform	14.7	N.D.
Chloromethane	14.7	N.D.
2-Chlorotoluene	14.7	N.D.
4-Chlorotoluene	14.7	N.D.
2-Chloroethyl vinyl ether	14.7	N.D.
Dibromochloromethane	14.7	N.D.
Dichlorodifluoromethane	14.7	N.D.
Dibromomethane	14.7	N.D.
1,2-Dibromoethane	14.7	N.D.
1,2-Dibromo-3-chloropropane	14.7	N.D.
1,3-Dichlorobenzene	14.7	N.D.
1,2-Dichlorobenzene	14.7	N.D.
1,4-Dichlorobenzene	14.7	N.D.
1,1-Dichloroethane	14.7	N.D.
1,2-Dichloroethane	14.7	N.D.
1,1-Dichloroethene	14.7	N.D.
cis-1,2-Dichloroethene	14.7	N.D.
trans-1,2-Dichloroethene	14.7	N.D.
1,2-Dichloropropane	14.7	N.D.
1,3-Dichloropropane	14.7	N.D.
2,2-Dichloropropane	14.7	N.D.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00785
Field ID: SB-4-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	14.7	N.D.
trans 1,3-Dichloropropene	14.7	N.D.
1,1-Dichloropropene	14.7	N.D.
Ethyl Benzene	14.7	N.D.
2-Hexanone	29.5	N.D.
Hexachlorobutadiene	14.7	N.D.
Methylene chloride	14.7	N.D.
4-methyl-2-pentanone	14.7	N.D.
Styrene	14.7	N.D.
Tetrachloroethene	29.5	N.D.
Toluene	14.7	N.D.
1,1,2,2-Tetrachloroethane	29.5	N.D.
1,1,1-Trichloroethane	14.7	N.D.
1,1,2-Trichloroethane	14.7	N.D.
Trichloroethene	14.7	N.D.
Trichlorofluoromethane	14.7	N.D.
1,1,1,2-Tetrachloroethane	14.7	N.D.
1,2,3-Trichloropropane	14.7	N.D.
1,2,4-Trimethylbenzene	14.7	N.D.
1,3,5-Trimethylbenzene	14.7	N.D.
1,2,3-Trichlorobenzene	14.7	N.D.
1,2,4-Trichlorobenzene	14.7	N.D.
Isopropylbenzene	14.7	N.D.
p-Isopropyltoluene	14.7	N.D.
n-Propylbenzene	14.7	N.D.
Napthalene	14.7	N.D.
Vinyl Acetate	29.5	N.D.
Vinyl chloride	14.7	N.D.
Total Xylenes	14.7	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00785
Field ID: SB-4-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 13%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	57.4	N.D.
Benzene	11.5	N.D.
Bromobenzene	11.5	N.D.
Bromodichloromethane	11.5	N.D.
n-Butylbenzene	11.5	N.D.
sec-Butylbenzene	11.5	N.D.
tert-Butylbenzene	11.5	N.D.
Bromochloromethane	11.5	N.D.
Bromomethane	11.5	N.D.
Bromoform	11.5	N.D.
2-Butanone	23.0	N.D.
Carbondisulfide	11.5	N.D.
Carbon tetrachloride	23.0	N.D.
Chlorobenzene	11.5	N.D.
Chloroethane	11.5	N.D.
Chloroform	11.5	N.D.
Chloromethane	11.5	N.D.
2-Chlorotoluene	11.5	N.D.
4-Chlorotoluene	11.5	N.D.
2-Chloroethyl vinyl ether	11.5	N.D.
Dibromochloromethane	11.5	N.D.
Dichlorodifluoromethane	11.5	N.D.
Dibromomethane	11.5	N.D.
1,2-Dibromoethane	11.5	N.D.
1,2-Dibromo-3-chloropropane	11.5	N.D.
1,3-Dichlorobenzene	11.5	N.D.
1,2-Dichlorobenzene	11.5	N.D.
1,4-Dichlorobenzene	11.5	N.D.
1,1-Dichloroethane	11.5	N.D.
1,2-Dichloroethane	11.5	N.D.
1,1-Dichloroethene	11.5	N.D.
cis-1,2-Dichloroethene	11.5	N.D.
trans-1,2-Dichloroethene	11.5	N.D.
1,2-Dichloropropane	11.5	N.D.
1,3-Dichloropropane	11.5	N.D.
2,2-Dichloropropane	11.5	N.D.

AEA LABORATORIES, INC.

PAI Environmental
5 Revere Drive, Suite 200
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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00786
Field ID: SB-4-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.5	N.D.
trans 1,3-Dichloropropene	11.5	N.D.
1,1-Dichloropropene	11.5	N.D.
Ethyl Benzene	11.5	N.D.
2-Hexanone	23.0	N.D.
Hexachlorobutadiene	11.5	N.D.
Methylene chloride	11.5	N.D.
4-methyl-2-pentanone	11.5	N.D.
Styrene	11.5	N.D.
Tetrachloroethene	23.0	N.D.
Toluene	11.5	N.D.
1,1,2,2-Tetrachloroethane	23.0	N.D.
1,1,1-Trichloroethane	11.5	N.D.
1,1,2-Trichloroethane	11.5	N.D.
Trichloroethene	11.5	N.D.
Trichlorofluoromethane	11.5	N.D.
1,1,1,2-Tetrachloroethene	11.5	N.D.
1,2,3-Trichloropropane	11.5	N.D.
1,2,4-Trimethylbenzene	11.5	N.D.
1,3,5-Trimethylbenzene	11.5	N.D.
1,2,3-Trichlorobenzene	11.5	N.D.
1,2,4-Trichlorobenzene	11.5	N.D.
Isopropylbenzene	11.5	N.D.
p-Isopropyltoluene	11.5	N.D.
n-Propylbenzene	11.5	N.D.
Napthalene	11.5	N.D.
Vinyl Acetate	23.0	N.D.
Vinyl chloride	11.5	N.D.
Total Xylenes	11.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00767
Field ID: SB-4-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 14%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	58.3	N.D.
Benzene	11.7	N.D.
Bromobenzene	11.7	N.D.
Bromodichloromethane	11.7	N.D.
n-Butylbenzene	11.7	N.D.
sec-Butylbenzene	11.7	N.D.
tert-Butylbenzene	11.7	N.D.
Bromochloromethane	11.7	N.D.
Bromomethane	11.7	N.D.
Bromoform	11.7	N.D.
2-Butanone	23.3	N.D.
Carbondisulfide	11.7	N.D.
Carbon tetrachloride	23.3	N.D.
Chlorobenzene	11.7	N.D.
Chloroethane	11.7	N.D.
Chloroform	11.7	N.D.
Chloromethane	11.7	N.D.
2-Chlorotoluene	11.7	N.D.
4-Chlorotoluene	11.7	N.D.
2-Chloroethyl vinyl ether	11.7	N.D.
Dibromochloromethane	11.7	N.D.
Dichlorodifluoromethane	11.7	N.D.
Dibromomethane	11.7	N.D.
1,2-Dibromoethane	11.7	N.D.
1,2-Dibromo-3-chloropropane	11.7	N.D.
1,3-Dichlorobenzene	11.7	N.D.
1,2-Dichlorobenzene	11.7	N.D.
1,4-Dichlorobenzene	11.7	N.D.
1,1-Dichloroethane	11.7	N.D.
1,2-Dichloroethane	11.7	N.D.
1,1-Dichloroethene	11.7	N.D.
cis-1,2-Dichloroethene	11.7	N.D.
trans-1,2-Dichloroethene	11.7	N.D.
1,2-Dichloropropane	11.7	N.D.
1,3-Dichloropropane	11.7	N.D.
2,2-Dichloropropane	11.7	N.D.

AEA LABORATORIES, INC.

PAI Environmental	Lab Number: AE00787	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-4-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 16, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.7	N.D.
trans 1,3-Dichloropropene	11.7	N.D.
1,1-Dichloropropene	11.7	N.D.
Ethyl Benzene	11.7	N.D.
2-Hexanone	23.3	N.D.
Hexachlorobutadiene	11.7	N.D.
Methylene chloride	11.7	N.D.
4-methyl-2-pentanone	11.7	N.D.
Styrene	11.7	N.D.
Tetrachloroethene	23.3	N.D.
Toluene	11.7	N.D.
1,1,2,2-Tetrachloroethane	23.3	N.D.
1,1,1-Trichloroethane	11.7	N.D.
1,1,2-Trichloroethane	11.7	N.D.
Trichloroethene	11.7	N.D.
Trichlorofluoromethane	11.7	N.D.
1,1,1,2-Tetrachloroethane	11.7	N.D.
1,2,3-Trichloropropane	11.7	N.D.
1,2,4-Trimethylbenzene	11.7	N.D.
1,3,5-Trimethylbenzene	11.7	N.D.
1,2,3-Trichlorobenzene	11.7	N.D.
1,2,4-Trichlorobenzene	11.7	N.D.
Isopropylbenzene	11.7	N.D.
p-Isopropyltoluene	11.7	N.D.
n-Propylbenzene	11.7	N.D.
Napthalene	11.7	N.D.
Vinyl Acetate	23.3	N.D.
Vinyl chloride	11.7	N.D.
Total Xylenes	11.7	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAJ Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00788
Field ID: SB-5-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 17%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	60.0	N.D.
Benzene	12.0	N.D.
Bromobenzene	12.0	N.D.
Bromodichloromethane	12.0	N.D.
n-Butylbenzene	12.0	N.D.
sec-Butylbenzene	12.0	N.D.
tert-Butylbenzene	12.0	N.D.
Bromochloromethane	12.0	N.D.
Bromomethane	12.0	N.D.
Bromoform	12.0	N.D.
2-Butanone	24.0	N.D.
Carbondisulfide	12.0	N.D.
Carbon tetrachloride	24.0	N.D.
Chlorobenzene	12.0	N.D.
Chloroethane	12.0	N.D.
Chloroform	12.0	N.D.
Chloromethane	12.0	N.D.
2-Chlorotoluene	12.0	N.D.
4-Chlorotoluene	12.0	N.D.
2-Chloroethyl vinyl ether	12.0	N.D.
Dibromochloromethane	12.0	N.D.
Dichlorodifluoromethane	12.0	N.D.
Dibromomethane	12.0	N.D.
1,2-Dibromoethane	12.0	N.D.
1,2-Dibromo-3-chloropropane	12.0	N.D.
1,3-Dichlorobenzene	12.0	N.D.
1,2-Dichlorobenzene	12.0	N.D.
1,4-Dichlorobenzene	12.0	N.D.
1,1-Dichloroethane	12.0	N.D.
1,2-Dichloroethane	12.0	N.D.
1,1-Dichloroethene	12.0	N.D.
cis-1,2-Dichloroethene	12.0	N.D.
trans-1,2-Dichloroethene	12.0	N.D.
1,2-Dichloropropane	12.0	N.D.
1,3-Dichloropropane	12.0	N.D.
2,2-Dichloropropane	12.0	N.D.

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EAI Environmental	Lab Number: AE00788	Sampled: 02/01/99
5 Revere Dr, Suite 510	Field ID: SB-5-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.0	N.D.
trans 1,3-Dichloropropene	12.0	N.D.
1,1-Dichloropropene	12.0	N.D.
Ethyl Benzene	12.0	N.D.
2-Hexanone	24.0	N.D.
Hexachlorobutadiene	12.0	N.D.
Methylene chloride	12.0	N.D.
4-methyl-2-pentanone	12.0	N.D.
Styrene	12.0	N.D.
Tetrachloroethene	24.0	N.D.
Toluene	12.0	N.D.
1,1,2,2-Tetrachloroethane	24.0	N.D.
1,1,1-Trichloroethane	12.0	N.D.
1,1,2-Trichloroethane	12.0	N.D.
Trichloroethene	12.0	N.D.
Trichlorofluoromethane	12.0	N.D.
1,1,1,2-Tetrachloroethane	12.0	N.D.
1,2,3-Trichloropropane	12.0	N.D.
1,2,4-Trimethylbenzene	12.0	N.D.
1,3,5-Trimethylbenzene	12.0	N.D.
1,2,3-Trichlorobenzene	12.0	N.D.
1,2,4-Trichlorobenzene	12.0	N.D.
Isopropylbenzene	12.0	N.D.
p-Isopropyltoluene	12.0	N.D.
n-Propylbenzene	12.0	N.D.
Naphthalene	12.0	N.D.
Vinyl Acetate	24.0	N.D.
Vinyl chloride	12.0	N.D.
Total Xylenes	12.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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DBA: AMERICAN-ATHENA LABORATORIES

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5 Revere Dr., Suite 310
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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00789
Field ID: SB-5-2
Client Project I.D: MSC Yard 15, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 18%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	59.5	N.D.
Benzene	11.9	N.D.
Bromobenzene	11.9	N.D.
Bromodichloromethane	11.9	N.D.
n-Butylbenzene	11.9	N.D.
sec-Butylbenzene	11.9	N.D.
tert-Butylbenzene	11.9	N.D.
Bromochloromethane	11.9	N.D.
Bromomethane	11.9	N.D.
Bromoform	11.9	N.D.
2-Butanone	23.8	N.D.
Carbondisulfide	11.9	N.D.
Carbon tetrachloride	23.8	N.D.
Chlorobenzene	11.9	N.D.
Chloroethane	11.9	N.D.
Chloroform	11.9	N.D.
Chloromethane	11.9	N.D.
2-Chlorotoluene	11.9	N.D.
4-Chlorotoluene	11.9	N.D.
2-Chloroethyl vinyl ether	11.9	N.D.
Dibromochloromethane	11.9	N.D.
Dichlorodifluoromethane	11.9	N.D.
Dibromomethane	11.9	N.D.
1,2-Dibromoethane	11.9	N.D.
1,2-Dibromo-3-chloropropane	11.9	N.D.
1,3-Dichlorobenzene	11.9	N.D.
1,2-Dichlorobenzene	11.9	N.D.
1,4-Dichlorobenzene	11.9	N.D.
1,1-Dichloroethane	11.9	N.D.
1,2-Dichloroethane	11.9	N.D.
1,1-Dichloroethene	11.9	N.D.
cis-1,2-Dichloroethene	11.9	N.D.
trans-1,2-Dichloroethene	11.9	N.D.
1,2-Dichloropropane	11.9	N.D.
1,3-Dichloropropane	11.9	N.D.
2,2-Dichloropropane	11.9	N.D.

AEA LABORATORIES, INC.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00789
Field ID: SB-5-2
Client Project I.D: MSC Yard 16, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.9	N.D.
trans 1,3-Dichloropropene	11.9	N.D.
1,1-Dichloropropene	11.9	N.D.
Ethyl Benzene	11.9	N.D.
2-Hexanone	23.8	N.D.
Hexachlorobutadiene	11.9	N.D.
Methylene chloride	11.9	N.D.
4-methyl-2-pentanone	11.9	N.D.
Styrene	11.9	N.D.
Tetrachloroethene	23.8	N.D.
Toluene	11.9	N.D.
1,1,2,2-Tetrachloroethane	23.8	N.D.
1,1,1-Trichloroethane	11.9	N.D.
1,1,2-Trichloroethane	11.9	N.D.
Trichloroethene	11.9	N.D.
Trichlorofluoromethane	11.9	N.D.
1,1,1,2-Tetrachloroethane	11.9	N.D.
1,2,3-Trichloropropane	11.9	N.D.
1,2,4-Trimethylbenzene	11.9	N.D.
1,3,5-Trimethylbenzene	11.9	N.D.
1,2,3-Trichlorobenzene	11.9	N.D.
1,2,4-Trichlorobenzene	11.9	N.D.
Isopropylbenzene	11.9	N.D.
p-Isopropyltoluene	11.9	N.D.
n-Propylbenzene	11.9	N.D.
Napthalene	11.9	N.D.
Vinyl Acetate	23.8	N.D.
Vinyl chloride	11.9	N.D.
Total Xylenes	11.9	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00790
Field ID: SB-5-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 15%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	58.8	N.D.
Benzene	11.8	N.D.
Bromobenzene	11.8	N.D.
Bromodichloromethane	11.8	N.D.
n-Butylbenzene	11.8	N.D.
sec-Butylbenzene	11.8	N.D.
tert-Butylbenzene	11.8	N.D.
Bromochloromethane	11.8	N.D.
Bromomethane	11.8	N.D.
Bromoform	11.8	N.D.
2-Butanone	23.5	N.D.
Carbondisulfide	11.8	N.D.
Carbon tetrachloride	23.5	N.D.
Chlorobenzene	11.8	N.D.
Chloroethane	11.8	N.D.
Chloroform	11.8	N.D.
Chloromethane	11.8	N.D.
2-Chlorotoluene	11.8	N.D.
4-Chlorotoluene	11.8	N.D.
2-Chloroethyl vinyl ether	11.8	N.D.
Dibromochloromethane	11.8	N.D.
Dichlorodifluoromethane	11.8	N.D.
Dibromomethane	11.8	N.D.
1,2-Dibromoethane	11.8	N.D.
1,2-Dibromo-3-chloropropane	11.8	N.D.
1,3-Dichlorobenzene	11.8	N.D.
1,2-Dichlorobenzene	11.8	N.D.
1,4-Dichlorobenzene	11.8	N.D.
1,1-Dichloroethane	11.8	N.D.
1,2-Dichloroethane	11.8	N.D.
1,1-Dichloroethene	11.8	N.D.
cis-1,2-Dichloroethene	11.8	N.D.
trans-1,2-Dichloroethene	11.8	N.D.
1,2-Dichloropropane	11.8	N.D.
1,3-Dichloropropane	11.8	N.D.
2,2-Dichloropropane	11.8	N.D.

AEA LABORATORIES, INC.

BAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00790
Field ID: SB-5-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.8	N.D.
trans 1,3-Dichloropropene	11.8	N.D.
1,1-Dichloropropene	11.8	N.D.
Ethyl Benzene	11.8	N.D.
2-Hexanone	23.5	N.D.
Hexachlorobutadiene	11.8	N.D.
Methylene chloride	11.8	N.D.
4-methyl-2-pentanone	11.8	N.D.
Styrene	11.8	N.D.
Tetrachloroethene	23.5	N.D.
Toluene	11.8	N.D.
1,1,2,2-Tetrachloroethane	23.5	N.D.
1,1,1-Trichloroethane	11.8	N.D.
1,1,2-Trichloroethane	11.8	N.D.
Trichloroethene	11.8	N.D.
Trichlorofluoromethane	11.8	N.D.
1,1,1,2-Tetrachloroethane	11.8	N.D.
1,2,3-Trichloropropane	11.8	N.D.
1,2,4-Trimethylbenzene	11.8	N.D.
1,3,5-Trimethylbenzene	11.8	N.D.
1,2,3-Trichlorobenzene	11.8	N.D.
1,2,4-Trichlorobenzene	11.8	N.D.
Isopropylbenzene	11.8	N.D.
p-Isopropyltoluene	11.8	N.D.
n-Propylbenzene	11.8	N.D.
Napthalene	11.8	N.D.
Vinyl Acetate	23.5	N.D.
Vinyl chloride	11.8	N.D.
Total Xylenes	11.8	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00791
Field ID: 68-6-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 10%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	55.7	N.D.
Benzene	11.1	N.D.
Bromobenzene	11.1	N.D.
Bromodichloromethane	11.1	N.D.
n-Butylbenzene	11.1	N.D.
sec-Butylbenzene	11.1	N.D.
tert-Butylbenzene	11.1	N.D.
Bromochloromethane	11.1	N.D.
Bromomethane	11.1	N.D.
Bromoform	11.1	N.D.
2-Butanone	22.3	N.D.
Carbondisulfide	11.1	N.D.
Carbon tetrachloride	22.3	N.D.
Chlorobenzene	11.1	N.D.
Chloroethane	11.1	N.D.
Chloroform	11.1	N.D.
Chloromethane	11.1	N.D.
2-Chlorotoluene	11.1	N.D.
4-Chlorotoluene	11.1	N.D.
2-Chloroethyl vinyl ether	11.1	N.D.
Dibromochloromethane	11.1	N.D.
Dichlorodifluoromethane	11.1	N.D.
Dibromomethane	11.1	N.D.
1,2-Dibromoethane	11.1	N.D.
1,2-Dibromo-3-chloropropane	11.1	N.D.
1,3-Dichlorobenzene	11.1	N.D.
1,2-Dichlorobenzene	11.1	N.D.
1,4-Dichlorobenzene	11.1	N.D.
1,1-Dichloroethane	11.1	N.D.
1,2-Dichloroethane	11.1	N.D.
1,1-Dichloroethene	11.1	N.D.
cis-1,2-Dichloroethene	11.1	N.D.
trans-1,2-Dichloroethene	11.1	N.D.
1,2-Dichloropropane	11.1	N.D.
1,3-Dichloropropane	11.1	N.D.
2,2-Dichloropropane	11.1	N.D.

AEA LABORATORIES, INC.

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Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00791
Field ID: SB-8-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.1	N.D.
trans 1,3-Dichloropropene	11.1	N.D.
1,1-Dichloropropene	11.1	N.D.
Ethyl Benzene	11.1	N.D.
2-Hexanone	22.3	N.D.
Hexachlorobutadiene	11.1	N.D.
Methylene chloride	11.1	N.D.
4-methyl-2-pentanone	11.1	N.D.
Styrene	11.1	N.D.
Tetrachloroethene	22.3	N.D.
Toluene	11.1	N.D.
1,1,2,2-Tetrachloroethane	22.3	N.D.
1,1,1-Trichloroethane	11.1	N.D.
1,1,2-Trichloroethane	11.1	N.D.
Trichloroethene	11.1	N.D.
Trichlorofluoromethane	11.1	N.D.
1,1,1,2-Tetrachloroethane	11.1	N.D.
1,2,3-Trichloropropane	11.1	N.D.
1,2,4-Trimethylbenzene	11.1	N.D.
1,3,5-Trimethylbenzene	11.1	N.D.
1,2,3-Trichlorobenzene	11.1	N.D.
1,2,4-Trichlorobenzene	11.1	202
Isopropylbenzene	11.1	N.D.
p-Isopropyltoluene	11.1	N.D.
n-Propylbenzene	11.1	N.D.
Napthalene	11.1	N.D.
Vinyl Acetate	22.3	N.D.
Vinyl chloride	11.1	N.D.
Total Xylenes	11.1	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA LABORATORIES, INC.

DBA: AMERICAN ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
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Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00792
Field ID: SB-8-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 18%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	60.6	N.D.
Benzene	12.1	N.D.
Bromobenzene	12.1	N.D.
Bromodichloromethane	12.1	N.D.
n-Butylbenzene	12.1	N.D.
sec-Butylbenzene	12.1	N.D.
tert-Butylbenzene	12.1	N.D.
Bromochloromethane	12.1	N.D.
Bromomethane	12.1	N.D.
Bromoform	12.1	N.D.
2-Butanone	24.2	N.D.
Carbondisulfide	12.1	N.D.
Carbon tetrachloride	24.2	N.D.
Chlorobenzene	12.1	N.D.
Chloroethane	12.1	N.D.
Chloroform	12.1	N.D.
Chloromethane	12.1	N.D.
2-Chlorotoluene	12.1	N.D.
4-Chlorotoluene	12.1	N.D.
2-Chloroethyl vinyl ether	12.1	N.D.
Dibromochloromethane	12.1	N.D.
Dichlorodifluoromethane	12.1	N.D.
Dibromomethane	12.1	N.D.
1,2-Dibromoethane	12.1	N.D.
1,2-Dibromo-3-chloropropane	12.1	N.D.
1,3-Dichlorobenzene	12.1	N.D.
1,2-Dichlorobenzene	12.1	N.D.
1,4-Dichlorobenzene	12.1	N.D.
1,1-Dichloroethane	12.1	N.D.
1,2-Dichloroethane	12.1	N.D.
1,1-Dichloroethene	12.1	N.D.
cis-1,2-Dichloroethene	12.1	N.D.
trans-1,2-Dichloroethene	12.1	N.D.
1,2-Dichloropropane	12.1	N.D.
1,3-Dichloropropane	12.1	N.D.
2,2-Dichloropropane	12.1	N.D.

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Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00792
Field ID: SB-6-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.1	N.D.
trans 1,3-Dichloropropene	12.1	N.D.
1,1-Dichloropropene	12.1	N.D.
Ethyl Benzene	12.1	N.D.
2-Hexanone	24.2	N.D.
Hexachlorobutadiene	12.1	N.D.
Methylene chloride	12.1	N.D.
4-methyl-2-pentanone	12.1	N.D.
Styrene	12.1	N.D.
Tetrachloroethene	24.2	N.D.
Toluene	12.1	N.D.
1,1,2,2-Tetrachloroethane	24.2	N.D.
1,1,1-Trichloroethane	12.1	N.D.
1,1,2-Trichloroethane	12.1	N.D.
Trichloroethene	12.1	N.D.
Trichlorofluoromethane	12.1	N.D.
1,1,1,2-Tetrachloroethane	12.1	N.D.
1,2,3-Trichloropropane	12.1	N.D.
1,2,4-Trimethylbenzene	12.1	N.D.
1,3,5-Trimethylbenzene	12.1	N.D.
1,2,3-Trichlorobenzene	12.1	N.D.
1,2,4-Trichlorobenzene	12.1	N.D.
Isopropylbenzene	12.1	N.D.
p-Isopropyltoluene	12.1	N.D.
n-Propylbenzene	12.1	N.D.
Napthalene	12.1	N.D.
Vinyl Acetate	24.2	N.D.
Vinyl chloride	12.1	N.D.
Total Xylenes	12.1	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00793
Field ID: SB-7-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 22%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	64.1	N.D.
Benzene	12.8	N.D.
Bromobenzene	12.8	N.D.
Bromodichloromethane	12.8	N.D.
n-Butylbenzene	12.8	N.D.
sec-Butylbenzene	12.8	N.D.
tert-Butylbenzene	12.8	N.D.
Bromochloromethane	12.8	N.D.
Bromomethane	12.8	N.D.
Bromoform	12.8	N.D.
2-Butanone	25.6	N.D.
Carbondisulfide	12.8	N.D.
Carbon tetrachloride	25.6	N.D.
Chlorobenzene	12.8	N.D.
Chloroethane	12.8	N.D.
Chloroform	12.8	N.D.
Chloromethane	12.8	N.D.
2-Chlorotoluene	12.8	N.D.
4-Chlorotoluene	12.8	N.D.
2-Chloroethyl vinyl ether	12.8	N.D.
Dibromochloromethane	12.8	N.D.
Dichlorodifluoromethane	12.8	N.D.
Dibromomethane	12.8	N.D.
1,2-Dibromoethane	12.8	N.D.
1,2-Dibromo-3-chloropropane	12.8	N.D.
1,3-Dichlorobenzene	12.8	N.D.
1,2-Dichlorobenzene	12.8	N.D.
1,4-Dichlorobenzene	12.8	N.D.
1,1-Dichloroethane	12.8	N.D.
1,2-Dichloroethane	12.8	N.D.
1,1-Dichloroethene	12.8	N.D.
cis-1,2-Dichloroethene	12.8	N.D.
trans-1,2-Dichloroethene	12.8	N.D.
1,2-Dichloropropane	12.8	N.D.
1,3-Dichloropropane	12.8	N.D.
2,2-Dichloropropane	12.8	N.D.

AEA LABORATORIES, INC.

DAI Environmental
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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00793
Field ID: SB-7-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.8	N.D.
trans 1,3-Dichloropropene	12.8	N.D.
1,1-Dichloropropene	12.8	N.D.
Ethyl Benzene	12.8	N.D.
2-Hexanone	25.6	N.D.
Hexachlorobutadiene	12.8	N.D.
Methylene chloride	12.8	N.D.
4-methyl-2-pentanone	12.8	N.D.
Styrene	12.8	N.D.
Tetrachloroethene	25.6	N.D.
Toluene	12.8	N.D.
1,1,2,2-Tetrachloroethane	25.6	N.D.
1,1,1-Trichloroethane	12.8	N.D.
1,1,2-Trichloroethane	12.8	N.D.
Trichloroethene	12.8	N.D.
Trichlorofluoromethane	12.8	N.D.
1,1,1,2-Tetrachloroethane	12.8	N.D.
1,2,3-Trichloropropane	12.8	N.D.
1,2,4-Trimethylbenzene	12.8	11
1,3,5-Trimethylbenzene	12.8	17
1,2,3-Trichlorobenzene	12.8	349
1,2,4-Trichlorobenzene	12.8	169
Isopropylbenzene	12.8	N.D.
p-Isopropyltoluene	12.8	N.D.
n-Propylbenzene	12.8	N.D.
Napthalene	12.8	299
Vinyl Acetate	25.6	N.D.
Vinyl chloride	12.8	N.D.
Total Xylenes	12.8	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Paddy

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00794
Field ID: SB-7-2
Client Project I.D: MSC Yard 1&, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 13%

Analyte	Detection Limit ug/kg	Sample Results ug/kg
Acetone	57.5	N.D.
Benzene	11.5	N.D.
Bromobenzene	11.5	N.D.
Bromodichloromethane	11.5	N.D.
n-Butylbenzene	11.5	N.D.
sec-Butylbenzene	11.5	N.D.
tert-Butylbenzene	11.5	N.D.
Bromochloromethane	11.5	N.D.
Bromomethane	11.5	N.D.
Bromoform	11.5	N.D.
2-Butanone	23.0	N.D.
Carbondisulfide	11.5	N.D.
Carbon tetrachloride	23.0	N.D.
Chlorobenzene	11.5	N.D.
Chloroethane	11.5	N.D.
Chloroform	11.5	N.D.
Chloromethane	11.5	N.D.
2-Chlorotoluene	11.5	N.D.
4-Chlorotoluene	11.5	N.D.
2-Chloroethyl vinyl ether	11.5	N.D.
Dibromochloromethane	11.5	N.D.
Dichlorodifluoromethane	11.5	N.D.
Dibromomethane	11.5	N.D.
1,2-Dibromoethane	11.5	N.D.
1,2-Dibromo-3-chloropropane	11.5	N.D.
1,3-Dichlorobenzene	11.5	N.D.
1,2-Dichlorobenzene	11.5	N.D.
1,4-Dichlorobenzene	11.5	N.D.
1,1-Dichloroethane	11.5	N.D.
1,2-Dichloroethane	11.5	N.D.
1,1-Dichloroethene	11.5	N.D.
cis-1,2-Dichloroethene	11.5	N.D.
trans-1,2-Dichloroethene	11.5	N.D.
1,2-Dichloropropane	11.5	N.D.
1,3-Dichloropropane	11.5	N.D.
2,2-Dichloropropane	11.5	N.D.

AEA LABORATORIES, INC.

GAI Environmental	Lab Number: AE00794	Sampled: 02/01/99
5 Revere Dr, Suite 310	Field ID: SB-7-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.5	N.D.
trans 1,3-Dichloropropene	11.5	N.D.
1,1-Dichloropropene	11.5	N.D.
Ethyl Benzene	11.5	N.D.
2-Hexanone	23.0	N.D.
Hexachlorobutadiene	11.5	N.D.
Methylene chloride	11.5	N.D.
4-methyl-2-pentanone	11.5	N.D.
Styrene	11.5	N.D.
Tetrachloroethene	23.0	N.D.
Toluene	11.5	N.D.
1,1,2,2-Tetrachloroethane	23.0	N.D.
1,1,1-Trichloroethane	11.5	N.D.
1,1,2-Trichloroethane	11.5	N.D.
Trichloroethene	11.5	N.D.
Trichlorofluoromethane	11.5	N.D.
1,1,1,2-Tetrachloroethane	11.5	N.D.
1,2,3-Trichloropropane	11.5	N.D.
1,2,4-Trimethylbenzene	11.5	N.D.
1,3,5-Trimethylbenzene	11.5	N.D.
1,2,3-Trichlorobenzene	11.5	N.D.
1,2,4-Trichlorobenzene	11.5	N.D.
Isopropylbenzene	11.5	N.D.
p-Isopropyltoluene	11.5	N.D.
n-Propylbenzene	11.5	N.D.
Napthalene	11.5	N.D.
Vinyl Acetate	23.0	N.D.
Vinyl chloride	11.5	N.D.
Total Xylenes	11.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA LABORATORIES, INC.

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Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00795
Field ID: SB-8-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 11%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	56.2	N.D.
Benzene	11.2	N.D.
Bromobenzene	11.2	N.D.
Bromodichloromethane	11.2	N.D.
n-Butylbenzene	11.2	N.D.
sec-Butylbenzene	11.2	N.D.
tert-Butylbenzene	11.2	N.D.
Bromochloromethane	11.2	N.D.
Bromomethane	11.2	N.D.
Bromoform	11.2	N.D.
2-Butanone	22.5	N.D.
Carbondisulfide	11.2	N.D.
Carbon tetrachloride	22.5	N.D.
Chlorobenzene	11.2	N.D.
Chloroethane	11.2	N.D.
Chloroform	11.2	N.D.
Chloromethane	11.2	N.D.
2-Chlorotoluene	11.2	N.D.
4-Chlorotoluene	11.2	N.D.
2-Chloroethyl vinyl ether	11.2	N.D.
Dibromochloromethane	11.2	N.D.
Dichlorodifluoromethane	11.2	N.D.
Dibromomethane	11.2	N.D.
1,2-Dibromoethane	11.2	N.D.
1,2-Dibromo-3-chloropropane	11.2	N.D.
1,3-Dichlorobenzene	11.2	N.D.
1,2-Dichlorobenzene	11.2	N.D.
1,4-Dichlorobenzene	11.2	N.D.
1,1-Dichloroethane	11.2	N.D.
1,2-Dichloroethane	11.2	N.D.
1,1-Dichloroethene	11.2	N.D.
cis-1,2-Dichloroethene	11.2	N.D.
trans-1,2-Dichloroethene	11.2	N.D.
1,2-Dichloropropane	11.2	N.D.
1,3-Dichloropropane	11.2	N.D.
2,2-Dichloropropane	11.2	N.D.

AEA LABORATORIES, INC.

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Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00795
Field ID: SB-8-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.2	N.D.
trans 1,3-Dichloropropene	11.2	N.D.
1,1-Dichloropropene	11.2	N.D.
Ethyl Benzene	11.2	N.D.
2-Hexanone	22.5	N.D.
Hexachlorobutadiene	11.2	N.D.
Methylene chloride	11.2	N.D.
4-methyl-2-pentanone	11.2	N.D.
Styrene	11.2	N.D.
Tetrachloroethene	22.5	N.D.
Toluene	11.2	N.D.
1,1,2,2-Tetrachloroethane	22.5	N.D.
1,1,1-Trichloroethane	11.2	N.D.
1,1,2-Trichloroethane	11.2	N.D.
Trichloroethene	11.2	N.D.
Trichlorofluoromethane	11.2	N.D.
1,1,1,2-Tetrachloroethane	11.2	N.D.
1,2,3-Trichloropropane	11.2	N.D.
1,2,4-Trimethylbenzene	11.2	N.D.
1,3,5-Trimethylbenzene	11.2	N.D.
1,2,3-Trichlorobenzene	11.2	N.D.
1,2,4-Trichlorobenzene	11.2	N.D.
Isopropylbenzene	11.2	N.D.
p-Isopropyltoluene	11.2	N.D.
n-Propylbenzene	11.2	N.D.
Napthalene	11.2	N.D.
Vinyl Acetate	22.5	N.D.
Vinyl chloride	11.2	N.D.
Total Xylenes	11.2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta B. Priddy

AEA
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DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00796
Field ID: SB-8-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 16%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	61.3	N.D.
Benzene	12.3	N.D.
Bromobenzene	12.3	N.D.
Bromodichloromethane	12.3	N.D.
n-Butylbenzene	12.3	N.D.
sec-Butylbenzene	12.3	N.D.
tert-Butylbenzene	12.3	N.D.
Bromochloromethane	12.3	N.D.
Bromomethane	12.3	N.D.
Bromoform	12.3	N.D.
2-Butanone	24.5	N.D.
Carbondisulfide	12.3	N.D.
Carbon tetrachloride	24.5	N.D.
Chlorobenzene	12.3	N.D.
Chloroethane	12.3	N.D.
Chloroform	12.3	N.D.
Chloromethane	12.3	N.D.
2-Chlorotoluene	12.3	N.D.
4-Chlorotoluene	12.3	N.D.
2-Chloroethyl vinyl ether	12.3	N.D.
Dibromochloromethane	12.3	N.D.
Dichlorodifluoromethane	12.3	N.D.
Dibromomethane	12.3	N.D.
1,2-Dibromoethane	12.3	N.D.
1,2-Dibromo-3-chloropropane	12.3	N.D.
1,3-Dichlorobenzene	12.3	N.D.
1,2-Dichlorobenzene	12.3	N.D.
1,4-Dichlorobenzene	12.3	N.D.
1,1-Dichloroethane	12.3	N.D.
1,2-Dichloroethane	12.3	N.D.
1,1-Dichloroethene	12.3	N.D.
cis-1,2-Dichloroethene	12.3	N.D.
trans-1,2-Dichloroethene	12.3	N.D.
1,2-Dichloropropane	12.3	N.D.
1,3-Dichloropropane	12.3	N.D.
2,2-Dichloropropane	12.3	N.D.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00796
Field ID: SB-8-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.3	N.D.
trans 1,3-Dichloropropene	12.3	N.D.
1,1-Dichloropropene	12.3	N.D.
Ethyl Benzene	12.3	78
2-Hexanone	24.5	N.D.
Hexachlorobutadiene	12.3	N.D.
Methylene chloride	12.3	N.D.
4-methyl-2-pentanone	12.3	N.D.
Styrene	12.3	N.D.
Tetrachloroethene	24.5	N.D.
Toluene	12.3	N.D.
1,1,2,2-Tetrachloroethane	24.5	N.D.
1,1,1-Trichloroethane	12.3	N.D.
1,1,2-Trichloroethane	12.3	N.D.
Trichloroethene	12.3	N.D.
Trichlorofluoromethane	12.3	N.D.
1,1,1,2-Tetrachloroethane	12.3	N.D.
1,2,3-Trichloropropane	12.3	N.D.
1,2,4-Trimethylbenzene	12.3	N.D.
1,3,5-Trimethylbenzene	12.3	N.D.
1,2,3-Trichlorobenzene	12.3	N.D.
1,2,4-Trichlorobenzene	12.3	N.D.
Isopropylbenzene	12.3	N.D.
p-Isopropyltoluene	12.3	N.D.
n-Propylbenzene	12.3	N.D.
Napthalene	12.3	N.D.
Vinyl Acetate	24.5	N.D.
Vinyl chloride	12.3	N.D.
Total Xylenes	12.3	75

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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5 Revere Dr., Suite 310
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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00797
Field ID: SB-6-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 18%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	60.7	N.D.
Benzene	12.1	N.D.
Bromobenzene	12.1	N.D.
Bromodichloromethane	12.1	N.D.
n-Butylbenzene	12.1	N.D.
sec-Butylbenzene	12.1	N.D.
tert-Butylbenzene	12.1	N.D.
Bromochloromethane	12.1	N.D.
Bromomethane	12.1	N.D.
Bromoform	12.1	N.D.
2-Butanone	24.3	N.D.
Carbondisulfide	12.1	N.D.
Carbon tetrachloride	24.3	N.D.
Chlorobenzene	12.1	N.D.
Chloroethane	12.1	N.D.
Chloroform	12.1	N.D.
Chloromethane	12.1	N.D.
2-Chlorotoluene	12.1	N.D.
4-Chlorotoluene	12.1	N.D.
2-Chloroethyl vinyl ether	12.1	N.D.
Dibromochloromethane	12.1	N.D.
Dichlorodifluoromethane	12.1	N.D.
Dibromomethane	12.1	N.D.
1,2-Dibromoethane	12.1	N.D.
1,2-Dibromo-3-chloropropane	12.1	N.D.
1,3-Dichlorobenzene	12.1	N.D.
1,2-Dichlorobenzene	12.1	N.D.
1,4-Dichlorobenzene	12.1	N.D.
1,1-Dichloroethane	12.1	N.D.
1,2-Dichloroethane	12.1	N.D.
1,1-Dichloroethene	12.1	N.D.
cis-1,2-Dichloroethene	12.1	N.D.
trans-1,2-Dichloroethene	12.1	N.D.
1,2-Dichloropropane	12.1	N.D.
1,3-Dichloropropane	12.1	N.D.
2,2-Dichloropropane	12.1	N.D.

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00797
Field ID: SB-8-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	12.1	N.D.
trans 1,3-Dichloropropene	12.1	N.D.
1,1-Dichloropropene	12.1	N.D.
Ethyl Benzene	12.1	N.D.
2-Hexanone	24.3	N.D.
Hexachlorobutadiene	12.1	N.D.
Methylene chloride	12.1	N.D.
4-methyl-2-pentanone	12.1	N.D.
Styrene	12.1	N.D.
Tetrachloroethene	24.3	N.D.
Toluene	12.1	N.D.
1,1,2,2-Tetrachloroethane	24.3	N.D.
1,1,1-Trichloroethane	12.1	N.D.
1,1,2-Trichloroethane	12.1	N.D.
Trichloroethene	12.1	N.D.
Trichlorofluoromethane	12.1	N.D.
1,1,1,2-Tetrachloroethane	12.1	N.D.
1,2,3-Trichloropropane	12.1	N.D.
1,2,4-Trimethylbenzene	12.1	N.D.
1,3,5-Trimethylbenzene	12.1	N.D.
1,2,3-Trichlorobenzene	12.1	N.D.
1,2,4-Trichlorobenzene	12.1	N.D.
Isopropylbenzene	12.1	N.D.
p-Isopropyltoluene	12.1	N.D.
n-Propylbenzene	12.1	N.D.
Napthalene	12.1	N.D.
Vinyl Acetate	24.3	N.D.
Vinyl chloride	12.1	N.D.
Total Xylenes	12.1	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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DBA: AMERICAN ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00798
Field ID: SB-9-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 14%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	58.0	N.D.
Benzene	11.6	458
Bromobenzene	11.6	N.D.
Bromodichloromethane	11.6	N.D.
n-Butylbenzene	11.6	852
sec-Butylbenzene	11.6	190
tert-Butylbenzene	11.6	N.D.
Bromochloromethane	11.6	N.D.
Bromomethane	11.6	N.D.
Bromoform	11.6	N.D.
2-Butanone	23.2	N.D.
Carbondisulfide	11.6	N.D.
Carbon tetrachloride	23.2	N.D.
Chlorobenzene	11.6	N.D.
Chloroethane	11.6	N.D.
Chloroform	11.6	N.D.
Chloromethane	11.6	N.D.
2-Chlorotoluene	11.6	N.D.
4-Chlorotoluene	11.6	N.D.
2-Chloroethyl vinyl ether	11.6	N.D.
Dibromochloromethane	11.6	N.D.
Dichlorodifluoromethane	11.6	N.D.
Dibromomethane	11.6	N.D.
1,2-Dibromoethane	11.6	N.D.
1,2-Dibromo-3-chloropropane	11.6	N.D.
1,3-Dichlorobenzene	11.6	N.D.
1,2-Dichlorobenzene	11.6	N.D.
1,4-Dichlorobenzene	11.6	N.D.
1,1-Dichloroethane	11.6	N.D.
1,2-Dichloroethane	11.6	N.D.
1,1-Dichloroethene	11.6	N.D.
cis-1,2-Dichloroethene	11.6	N.D.
trans-1,2-Dichloroethene	11.6	N.D.
1,2-Dichloropropane	11.6	N.D.
1,3-Dichloropropane	11.6	N.D.
2,2-Dichloropropane	11.6	N.D.

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DAI Environmental	Lab Number: AE00798	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-9-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.6	N.D.
trans 1,3-Dichloropropene	11.6	N.D.
1,1-Dichloropropene	11.6	N.D.
Ethyl Benzene	11.6	287
2-Hexanone	23.2	N.D.
Hexachlorobutadiene	11.6	N.D.
Methylene chloride	11.6	N.D.
4-methyl-2-pentanone	11.6	N.D.
Styrene	11.6	N.D.
Tetrachloroethene	23.2	N.D.
Toluene	11.6	87
1,1,2,2-Tetrachloroethane	23.2	N.D.
1,1,1-Trichloroethane	11.6	N.D.
1,1,2-Trichloroethane	11.6	N.D.
Trichloroethene	11.6	N.D.
Trichlorofluoromethane	11.6	N.D.
1,1,1,2-Tetrachloroethane	11.6	N.D.
1,2,3-Trichloropropane	11.6	N.D.
1,2,4-Trimethylbenzene	11.6	116
1,3,5-Trimethylbenzene	11.6	165
1,2,3-Trichlorobenzene	11.6	N.D.
1,2,4-Trichlorobenzene	11.6	N.D.
Isopropylbenzene	11.6	1002
p-Isopropyltoluene	11.6	121
n-Propylbenzene	11.6	3250
Napthalene	11.6	536
Vinyl Acetate	23.2	N.D.
Vinyl chloride	11.6	N.D.
Total Xylenes	11.6	195

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

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5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE007999
Field ID: SB-9-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-06/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 8%

Analyte	Detection Limit	Sample Results
	µg/kg	µg/kg
Acetone	54.1	N.D.
Benzene	10.8	1510
Bromobenzene	10.8	N.D.
Bromodichloromethane	10.8	N.D.
n-Butylbenzene	10.8	N.D.
sec-Butylbenzene	10.8	562
tert-Butylbenzene	10.8	N.D.
Bromochloromethane	10.8	N.D.
Bromomethane	10.8	N.D.
Bromoform	10.8	N.D.
2-Butanone	21.6	N.D.
Carbondisulfide	10.8	N.D.
Carbon tetrachloride	21.6	N.D.
Chlorobenzene	10.8	N.D.
Chloroethane	10.8	N.D.
Chloroform	10.8	N.D.
Chloromethane	10.8	N.D.
2-Chlorotoluene	10.8	N.D.
4-Chlorotoluene	10.8	N.D.
2-Chloroethyl vinyl ether	10.8	N.D.
Dibromochloromethane	10.8	N.D.
Dichlorodifluoromethane	10.8	N.D.
Dibromomethane	10.8	N.D.
1,2-Dibromoethane	10.8	N.D.
1,2-Dibromo-3-chloropropane	10.8	N.D.
1,3-Dichlorobenzene	10.8	N.D.
1,2-Dichlorobenzene	10.8	N.D.
1,4-Dichlorobenzene	10.8	N.D.
1,1-Dichloroethane	10.8	N.D.
1,2-Dichloroethane	10.8	N.D.
1,1-Dichloroethene	10.8	N.D.
cis-1,2-Dichloroethene	10.8	N.D.
trans-1,2-Dichloroethene	10.8	N.D.
1,2-Dichloropropane	10.8	N.D.
1,3-Dichloropropane	10.8	N.D.
2,2-Dichloropropane	10.8	N.D.

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RAI Environmental	Lab Number: AE007999	Sampled: 02/01/99
5 Revere Dr., Suite 370	Field ID: SB-9-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Analyzed: 02/02-08/9
Fax: (847) 498-6911	Analysis Method: EPA 5035/8260	Reported: 02/10/99
Att: Dan Bradfield	Sample Descript: Soil	

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	10.8	N.D.
trans 1,3-Dichloropropene	10.8	N.D.
1,1-Dichloropropene	10.8	N.D.
Ethyl Benzene	10.8	7870
2-Hexanone	21.6	N.D.
Hexachlorobutadiene	10.8	N.D.
Methylene chloride	10.8	N.D.
4-methyl-2-pentanone	10.8	N.D.
Styrene	10.8	N.D.
Tetrachloroethene	21.6	N.D.
Toluene	10.8	356
1,1,2,2-Tetrachloroethane	21.6	N.D.
1,1,1-Trichloroethane	10.8	N.D.
1,1,2-Trichloroethane	10.8	N.D.
Trichloroethene	10.8	N.D.
Trichlorofluoromethane	10.8	N.D.
1,1,1,2-Tetrachloroethane	10.8	N.D.
1,2,3-Trichloropropane	10.8	N.D.
1,2,4-Trimethylbenzene	10.8	21600
1,3,5-Trimethylbenzene	10.8	25200
1,2,3-Trichlorobenzene	10.8	N.D.
1,2,4-Trichlorobenzene	10.8	N.D.
Isopropylbenzene	10.8	2570
p-Isopropyltoluene	10.8	1940
n-Propylbenzene	10.8	N.D.
Napthalene	10.8	1490
Vinyl Acetate	21.6	N.D.
Vinyl chloride	10.8	N.D.
Total Xylenes	10.8	6640

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

AEA
LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE007800
Field ID: SB-9-3
Client Project I.D: M&C Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Moisture= 18%

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	59.7	N.D.
Benzene	11.9	5930 J
Bromobenzene	11.9	N.D.
Bromodichloromethane	11.9	N.D.
n-Butylbenzene	11.9	N.D.
sec-Butylbenzene	11.9	N.D.
tert-Butylbenzene	11.9	N.D.
Bromochloromethane	11.9	N.D.
Bromomethane	11.9	N.D.
Bromoform	11.9	N.D.
2-Butanone	23.9	N.D.
Carbondisulfide	11.9	N.D.
Carbon tetrachloride	23.9	N.D.
Chlorobenzene	11.9	N.D.
Chloroethane	11.9	N.D.
Chloroform	11.9	N.D.
Chloromethane	11.9	N.D.
2-Chlorotoluene	11.9	N.D.
4-Chlorotoluene	11.9	N.D.
2-Chloroethyl vinyl ether	11.9	N.D.
Dibromochloromethane	11.9	N.D.
Dichlorodifluoromethane	11.9	N.D.
Dibromomethane	11.9	N.D.
1,2-Dibromoethane	11.9	N.D.
1,2-Dibromo-3-chloropropane	11.9	N.D.
1,3-Dichlorobenzene	11.9	N.D.
1,2-Dichlorobenzene	11.9	N.D.
1,4-Dichlorobenzene	11.9	N.D.
1,1-Dichloroethane	11.9	N.D.
1,2-Dichloroethane	11.9	N.D.
1,1-Dichloroethene	11.9	N.D.
cis-1,2-Dichloroethene	11.9	N.D.
trans-1,2-Dichloroethene	11.9	N.D.
1,2-Dichloropropane	11.9	N.D.
1,3-Dichloropropane	11.9	N.D.
2,2-Dichloropropane	11.9	N.D.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE007800
Field ID: SB-9-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: EPA 5035/8260
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/02-08/9
Reported: 02/10/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
cis-1,3-Dichloropropene	11.9	N.D.
trans 1,3-Dichloropropene	11.9	N.D.
1,1-Dichloropropene	11.9	N.D.
Ethyl Benzene	11.9	1010 J
2-Hexanone	23.9	N.D.
Hexachlorobutadiene	11.9	N.D.
Methylene chloride	11.9	N.D.
4-methyl-2-pentanone	11.9	N.D.
Styrene	11.9	N.D.
Tetrachloroethene	23.9	N.D.
Toluene	11.9	N.D.
1,1,2,2-Tetrachloroethane	23.9	N.D.
1,1,1-Trichloroethane	11.9	N.D.
1,1,2-Trichloroethane	11.9	N.D.
Trichloroethene	11.9	N.D.
Trichlorofluoromethane	11.9	N.D.
1,1,1,2-Tetrachloroethane	11.9	N.D.
1,2,3-Trichloropropane	11.9	N.D.
1,2,4-Trimethylbenzene	11.9	453
1,3,5-Trimethylbenzene	11.9	748
1,2,3-Trichlorobenzene	11.9	N.D.
1,2,4-Trichlorobenzene	11.9	N.D.
Isopropylbenzene	11.9	172
p-Isopropyltoluene	11.9	N.D.
n-Propylbenzene	11.9	213
Napthalene	11.9	N.D.
Vinyl Acetate	23.9	N.D.
Vinyl chloride	11.9	N.D.
Total Xylenes	11.9	2320 J

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Aminta P. Priddy

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-5911
Att: Dan Bradfield

Lab Number: AE00777
Field ID: SB-1-1
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.54
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
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DAI Environmental	Lab Number: AE00778	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-8911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.60
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
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DAI Environmental	Lab Number: AE00779	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-1-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-8911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.79
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
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DAI Environmental	Lab Number: AE00780	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-2-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.5
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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DAI Environmental	Lab Number: AE00781	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-2-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.08
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta P. Priddy

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DAI Environmental	Lab Number: AE00782	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-3-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-160 F	>160
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	5.44
TCLP Lead	1311/60109	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit or detection.

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Laboratory Director
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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00783
Field ID: SB-3-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.15
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
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DAI Environmental	Lab Number: AE00784	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-3-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.93
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta P. Priddy

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DAI Environmental	Lab Number: AE00785	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-4-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descripl:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.08
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta P. Priddy

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00766
Field ID: SB-4-2
Client Project I.D: MSC Yard 16, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-160 F	>160
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	8.43
TCLP Lead	1311/60108	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Aminta P. Priddy

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DAI Environmental	Lab Number: AE00787	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-4-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6811	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-160 F	>160
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.43
TCLP Lead	1311/60108	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta B.Priddy

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DAI Environmental	Lab Number: AE00788	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 16, Lyons	Extracted: 02/05/99
Fax: (847) 498-8911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descripl:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.40
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta P. Priddy

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GAI Environmental	Lab Number: AE00789	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-8/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.48
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta B.Priddy

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DAI Environmental	Lab Number: AE00790	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-5-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.61
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Anminta P.Priddy

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00791
Field ID: SB-6-1
Client Project I.D: MGC Yard 18, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>150
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.14
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Aminta P. Priddy

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DAI Environmental	Lab Number: AE00792	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-6-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-8911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.36
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Paddy

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DAI Environmental	Lab Number: AE00793	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-7-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	8.37
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P. Priddy

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number: AE00794
Field ID: SB-7-2
Client Project I.D: MSC Yard 16, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.39
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6011
Att: Dan Bradfield

Lab Number: AE00795
Field ID: SB-8-1
Client Project I.D: MSC Yard 16, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-8/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.22
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
Arminta P.Priddy

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DAI Environmental	Lab Number: AE00798	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-8-2	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-8/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.28
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
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DAI Environmental	Lab Number: AE00797	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-6-3	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 19, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	8.33
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director
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DAI Environmental	Lab Number: AE00798	Sampled: 02/01/99
5 Revere Dr., Suite 310	Field ID: SB-9-1	Received: 02/02/99
Northbrook, IL 60062	Client Project I.D: MSC Yard 18, Lyons	Extracted: 02/05/99
Fax: (847) 498-6911	Analysis Method: See Below	Analyzed: 02/5-6/99
Att: Dan Bradfield	Sample Descript:Soil	Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-160 F	>160
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.17
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

AEA
LABORATORIES, INC.
DBA: AMERICAN-ATHENA LABORATORIES

DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-5911
Att: Dan Bradfield

Lab Number: AE00799
Field ID: SB-9-2
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4952	20-150 F	>150
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	7.31
TCLP Lead	1311/6010B	0.004 mg/L	0.0319

Analytes reported as N.D. were not present above the stated limit of detection.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number: AE00800
Field ID: SB-9-3
Client Project I.D: MSC Yard 18, Lyons
Analysis Method: See Below
Sample Descript:Soil

Sampled: 02/01/99
Received: 02/02/99
Extracted: 02/05/99
Analyzed: 02/5-6/99
Reported: 02/10/99

LABORATORY ANALYSIS FOR LANDFILL ANALYSIS

Analyte	EPA Method	MDL	Sample Results
Flammability Potential	ASTM D4982	20-180 F	>180
Paint Filter	9095	Pass/Fail	Pass
pH	9040/9041	0-14	6.26
TCLP Lead	1311/6010B	0.004 mg/L	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

First Lab Number: AE00777
Project ID: MSC Yard 18, Lyons
Project NO.:
Analysis Method: ASTM D2974 A&C
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/05-12/99
Reported: 02/18/99

ASTM D 2974 A & C:

Sample Number	Field ID	Analyte	Result
AE00777	SB-1-1	Moisture Content, %	20.80%
		Ash Content, %	92.93%
		Organic Matter Content, %	7.07%
AE00778	SB-1-2	Moisture Content, %	12.00%
		Ash Content, %	97.10%
		Organic Matter Content, %	2.90%
AE00779	SB-1-3	Moisture Content, %	32.60%
		Ash Content, %	89.60%
		Organic Matter Content, %	10.40%
AE00780	SB-2-1	Moisture Content, %	11.90%
		Ash Content, %	100.23%
		Organic Matter Content, %	-0.23%
AE00781	SB-2-2	Moisture Content, %	11.90%
		Ash Content, %	96.37%
		Organic Matter Content, %	3.63%
AE00783	SB-3-1	Moisture Content, %	17.50%
		Ash Content, %	98.84%
		Organic Matter Content, %	1.16%
AE00784	SB-3-2	Moisture Content, %	16.30%
		Ash Content, %	97.78%
		Organic Matter Content, %	2.22%

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Fax: (847) 498-6911
Att: Dan Bradfield

First Lab Number: AE00777
Project ID: MSC Yard 18, Lyons
Project NO.:
Analysis Method: ASTM D2974 A&C
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/05-12/99
Reported: 02/18/99

ASTM D 2974 A & C:

Sample Number	Field ID	Analyte	Result
AE00784	SB-3-3	Moisture Content, %	33.30%
		Ash Content, %	98.90%
		Organic Matter Content, %	1.10%
AE00785	SB-4-1	Moisture Content, %	32.20%
		Ash Content, %	87.30%
		Organic Matter Content, %	12.70%
AE00786	SB-4-2	Moisture Content, %	12.90%
		Ash Content, %	96.56%
		Organic Matter Content, %	3.44%
AE00787	SB-4-3	Moisture Content, %	14.20%
		Ash Content, %	95.10%
		Organic Matter Content, %	4.90%
AE00788	SB-5-1	Moisture Content, %	16.60%
		Ash Content, %	93.88%
		Organic Matter Content, %	6.12%
AE00789	SB-5-2	Moisture Content, %	15.90%
		Ash Content, %	97.86%
		Organic Matter Content, %	2.14%
AE00790	SB-5-3	Moisture Content, %	15.00%
		Ash Content, %	92.90%
		Organic Matter Content, %	7.10%

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5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

First Lab Number: AE00777
Project ID: MSC Yard 18, Lyons
Project NO.:
Analysis Method: ASTM D2974 A&C
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/05-12/99
Reported: 02/18/99

ASTM D 2974 A & C

Sample Number	Field ID	Analyte	Result
AE00791	SB-6-1	Moisture Content, %	10.20%
		Ash Content, %	93.88%
		Organic Matter Content, %	6.12%
AE00792	SB-6-2	Moisture Content, %	17.50%
		Ash Content, %	100.00%
		Organic Matter Content, %	0.00%
AE00793	SB-7-1	Moisture Content, %	22.00%
		Ash Content, %	82.95%
		Organic Matter Content, %	17.05%
AE00794	SB-7-2	Moisture Content, %	13.10%
		Ash Content, %	89.10%
		Organic Matter Content, %	10.90%
AE00795	SB-8-1	Moisture Content, %	11.00%
		Ash Content, %	94.99%
		Organic Matter Content, %	5.01%
AE00796	SB-8-2	Moisture Content, %	18.40%
		Ash Content, %	94.00%
		Organic Matter Content, %	6.00%
AE00797	SB-8-3	Moisture Content, %	17.60%
		Ash Content, %	99.51%
		Organic Matter Content, %	0.49%

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Att: Dan Bradfield

First Lab Number: AE00777
Project ID: MSC Yard 18, Lyons
Project NO.:
Analysis Method: ASTM D2974 A&C
Sample Descript: Soil

Sampled: 02/01/99
Received: 02/02/99
Analyzed: 02/05-12/99
Reported: 02/18/99

ASTM D 2974 A & C1

Sample Number	Field ID	Analyte	Result
AE00798	SB-9-1	Moisture Content, %	13.80%
		Ash Content, %	96.40%
		Organic Matter Content, %	3.60%
AE00799	SB-9-2	Moisture Content, %	7.50%
		Ash Content, %	91.68%
		Organic Matter Content, %	8.32%
AE00800	SB-9-3	Moisture Content, %	16.30%
		Ash Content, %	89.49%
		Organic Matter Content, %	10.51%

AEA Laboratories, Inc.
Laboratory Director
Arminta P.Priddy

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DBA: AMERICAN-ATHENA LABORATORIES

LABORATORY DATA REPORT

CLIENT DAI Invironmental
5 Revere Drive
Suite 310
Northbrook, IL 60062

PROJECT : MSC Yard 18, Lyons
NUMBER# : 6213
TASK ORDER : N/A
ATTN : Dan bradfield
RECEIVED : 02/03/99
REPORTED : 02/09/99
FILE# : 99000871 THRU 99000872

PROJECT SUMMARY:

Analyses were performed in accordance with the methods found in the USEPA publication: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition, December 1996. Specific method references are listed on the analytical report.

Results have been expressed on a "wet" weight (as received) basis.

All analyses were performed within established holding times, and all Quality Control criteria as outlined in the methods have been met.

LABORATORY DIRECTOR _____

INV# 51709

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES
LABORATORY TESTING OF SOIL WATER AND HAZARDOUS WASTE

8609 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524
Tel.: 773-693-8050 Fax: 773-693-8755 866-AEA-TEST
Web: http://www.aealab.com

CHAIN OF CUSTODY

Client: DAE Environmental	Project Name: MSC Yard 18, Lyons
Address: 5 Revere Drive Suite 312 Northbrook, IL 60062	Sampler Name:
	Project #: 6213
Report to: D. Bradfield / D. Patton	Time Period: (5 Day) 4 Day 3 Day 2 Day 1 Day <24Hr.
Phone #: 847-498-6410 Fax #: 694	Date Needed:

	Field ID; Location	Matrix	Date Time	Type Cont.	# Cont.	Parameters Requested	AEA ID #
1	MW-1	W	2/23/99 0835	2-PA 1-P	3	VOCs, PNAs	99000871
2	MW-4	W	2/23/99 1013	2-PA 1-P	3	VOCs, PNAs	99000872
3							
4							
5						VOAs have been	
6						rinsed w/ DI but	
7						No preservative due	
8						to high pH.	
9						A.V.	
10						2-3-99	
11							
12							
13							
14							
15							

PLEASE FILL COMPLETELY

Sample Preserved: Y/N Condition of Sample(s): Good - Violated
Preservative Type: Temp. of Container °C: 4

GLOSSARY:
MATRIX-Soil(S), Air(A), Water(W), Drinking Water(DW), Wipe(F), Other(O). A-Accept, R-Reject
CONTAINER-40ml Vial(A), 60ml Vial(B), 2oz(C), 4oz(D), 8oz(E), 1Liter(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W)
PRESERVATIVE-HCl, HNO3, H2SO4, NaOH, MeCl, Other(O). I-Ice. N/A-Not Applicable

Relinquished by: [signature]	Date/Time: 2/23/99	Accepted by: [signature]
Relinquished by:	Date/Time:	Accepted by:

Comments:

Page of

WHITE - OFFICE COPY YELLOW - LAB COPY PINK - CUSTOMER COPY

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DAI Environmental
5 Revere Dr., Suite 210
Northbrook, IL 60062
Fax: (847) 498-8911
Att: Dan Bradfield

Lab Number:99000871
Field ID:MW1
Client Project I.D:MSC Yard 18
Analysis Method: EPA 8310
Sample Descript: Water

Sampled: 02/03/99
Received:02/03/99
Analyzed:02/05/99
Reported:02/09/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)	IEPA Tier 1 Objectives Class 1: Remediation Objective mg/L (ppm)	IEPA Tier 1 Objectives Class 1: Acceptable Det. Limits mg/L (ppm)
Non-Carcinogenic PNA's				
Naphthalene	0.005	N.D.	0.025	*
Acenaphthene	0.005	N.D.	0.42	*
Anthracene	0.0002	N.D.	2.10	*
Fluoranthene	0.0006	N.D.	0.28	*
Fluorene	0.001	N.D.	0.28	*
Pyrene	0.001	N.D.	0.21	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.01	N.D.	–	
Benzo (ghi) perylene	0.0006	N.D.	–	
Phenanthrene	0.0003	N.D.	–	
TOTAL	–		4.2	–
Carcinogenic PNA's				
Benzo (a) anthracene	0.0001	N.D.	0.00013	*
Benzo (a) pyrene	0.0001	N.D.	0.0002	*
Benzo (b) fluoranthene	0.0002	N.D.	0.00018	*
Benzo (k) fluoranthene	0.0001	N.D.	0.00017	*
Chrysene	0.0005	N.D.	0.0015	*
Dibenzo (a,h) anthracene	0.0002	N.D.	0.0003	*
Indeno (1,2,3-cd) pyrene	0.0002	N.D.	0.00043	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.
Analytes reported as N.D. were not present above the stated limit of detection.
" * " indicates that the ADL is less than or equal to the specified cleanup objectives.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number:99000872
Field ID:MW4
Client Project I.D:MSC Yard 18
Analysis Method: EPA 8310
Sample Descript: Water

Sampled: 02/03/99
Received:02/03/99
Analyzed:02/05/99
Reported:02/09/99

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)	IEPA Tier 1 Objectives Class 1 Remediation Objective mg/L (ppm)	IEPA Tier 1 Objectives Class 1 Acceptable Det. Limits mg/L (ppm)
Non-Carcinogenic PNA's				
Naphthalene	0.005	N.D.	0.025	*
Acenaphthene	0.005	N.D.	0.42	*
Anthracene	0.0002	N.D.	2.10	*
Fluoranthene	0.0006	N.D.	0.28	*
Fluorene	0.001	N.D.	0.28	*
Pyrene	0.001	N.D.	0.21	*
Other Non-Carcinogenic PNA's				
Acenaphthylene	0.01	N.D.	–	
Benzo (ghi) perylene	0.0008	N.D.	–	
Phenanthrene	0.0003	N.D.	–	
TOTAL	–		4.2	–
Carcinogenic PNA's				
Benzo (a) anthracene	0.0001	N.D.	0.00013	*
Benzo (a) pyrene	0.0001	N.D.	0.0002	*
Benzo (b) fluoranthene	0.0002	N.D.	0.00018	*
Benzo (k) fluoranthene	0.0001	N.D.	0.00017	*
Chrysene	0.0005	N.D.	0.0015	*
Dibenzo (a,h) anthracene	0.0002	N.D.	0.0003	*
Indeno (1,2,3-cd) pyrene	0.0002	N.D.	0.00043	*

Cleanup objectives are based upon IEPA Tier 1 Guidelines, June 5, 1997.
Analytes reported as N.D. were not present above the stated limit of detection.
"*" Indicates that the ADL is less than or equal to the specified cleanup objectives.

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DAI Environmental
5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number:99000871
Field ID:MW1
Client Project I.D:MSC Yard 18
Analysis Method: EPA 8260
Sample Descripl:Water

Sampled:02/03/99
Received:02/03/99
Analyzed:02/04/99
Reported:02/09/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2	N.D.
Bromobenzene	2	N.D.
Bromodichloromethane	2	N.D.
n-Butylbenzene	2	N.D.
sec-Butylbenzene	2	N.D.
tert-Butylbenzene	2	N.D.
Bromochloromethane	2	N.D.
Bromomethane	2	N.D.
Bromoform	2	N.D.
2-Butanone	5	N.D.
Carbondisulfide	2	N.D.
Carbon tetrachloride	5	N.D.
Chlorobenzene	2	N.D.
Chloroethane	2	N.D.
Chloroform	2	N.D.
Chloromethane	2	N.D.
2-Chlorotoluene	2	N.D.
4-Chlorotoluene	2	N.D.
2-Chloroethyl vinyl ether	2	N.D.
Dibromochloromethane	2	N.D.
Dichlorodifluoromethane	2	N.D.
Dibromomethane	2	N.D.
1,2-Dibromoethane	2	N.D.
1,2-Dibromo-3-chloropropane	2	N.D.
1,3-Dichlorobenzene	2	N.D.
1,2-Dichlorobenzene	2	N.D.
1,4-Dichlorobenzene	2	N.D.
1,1-Dichloroethane	2	N.D.
1,2-Dichloroethane	2	N.D.
1,1-Dichloroethene	2	N.D.
cis-1,2-Dichloroethene	2	N.D.
trans-1,2-Dichloroethene	2	N.D.
1,2-Dichloropropane	2	N.D.
1,3-Dichloropropane	2	N.D.
2,2-Dichloropropane	2	N.D.

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5 Revere Dr., Suite 310
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Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number:89000871
Field ID:MW1
Client Project I.D:M3C Yard 1
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:02/03/99
Received:02/03/99
Analyzed:02/04/99
Reported:02/09/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
cis-1,3-Dichloropropene	2	N.D.
trans 1,3-Dichloropropene	2	N.D.
1,1-Dichloropropene	2	N.D.
Ethyl Benzene	2	N.D.
2-Hexanone	5	N.D.
Hexachlorobutadiene	2	N.D.
Methylene chloride	2	N.D.
4-methyl-2-pentanone	2	N.D.
Styrene	2	N.D.
Tetrachloroethene	5	N.D.
Toluene	2	N.D.
1,1,2,2-Tetrachloroethane	5	N.D.
1,1,1-Trichloroethane	2	N.D.
1,1,2-Trichloroethane	2	N.D.
Trichloroethene	2	N.D.
Trichlorofluoromethane	2	N.D.
1,1,1,2-Tetrachloroethane	2	N.D.
1,2,3-Trichloropropane	2	N.D.
1,2,4-Trimethylbenzene	2	N.D.
1,3,5-Trimethylbenzene	2	N.D.
1,2,3-Trichlorobenzene	2	N.D.
1,2,4-Trichlorobenzene	2	N.D.
Isopropylbenzene	2	N.D.
p-Isopropyltoluene	2	N.D.
n-Propylbenzene	2	N.D.
Napthalene	10	N.D.
Vinyl Acetate	5	N.D.
Vinyl chloride	2	N.D.
Total Xylenes	2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number:99000872
Field ID:MW4
Client Project I.D:MGO Yard 19
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:02/03/99
Received:02/03/99
Analyzed:02/04/99
Reported:02/09/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2	N.D.
Bromobenzene	2	N.D.
Bromodichloromethane	2	N.D.
n-Butylbenzene	2	N.D.
sec-Butylbenzene	2	N.D.
tert-Butylbenzene	2	N.D.
Bromochloromethane	2	N.D.
Bromomethane	2	N.D.
Bromoform	2	N.D.
2-Butanone	5	N.D.
Carbondisulfide	2	N.D.
Carbon tetrachloride	5	N.D.
Chlorobenzene	2	N.D.
Chloroethane	2	N.D.
Chloroform	2	N.D.
Chloromethane	2	N.D.
2-Chlorotoluene	2	N.D.
4-Chlorotoluene	2	N.D.
2-Chloroethyl vinyl ether	2	N.D.
Dibromochloromethane	2	N.D.
Dichlorodifluoromethane	2	N.D.
Dibromomethane	2	N.D.
1,2-Dibromoethane	2	N.D.
1,2-Dibromo-3-chloropropane	2	N.D.
1,3-Dichlorobenzene	2	N.D.
1,2-Dichlorobenzene	2	N.D.
1,4-Dichlorobenzene	2	N.D.
1,1-Dichloroethene	2	N.D.
1,2-Dichloroethane	2	N.D.
1,1-Dichloroethane	2	N.D.
cis-1,2-Dichloroethene	2	N.D.
trans-1,2-Dichloroethene	2	N.D.
1,2-Dichloropropane	2	N.D.
1,3-Dichloropropane	2	N.D.
2,2-Dichloropropane	2	N.D.

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5 Revere Dr., Suite 310
Northbrook, IL 60062
Fax: (847) 498-6911
Att: Dan Bradfield

Lab Number:99000872
Field ID:MW4
Client Project I.D:MSC Yard 1
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:02/03/99
Received:02/03/99
Analyzed:02/04/99
Reported:02/09/99

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
cis-1,3-Dichloropropene	2	N.D.
trans 1,3-Dichloropropene	2	N.D.
1,1-Dichloropropene	2	N.D.
Ethyl Benzene	2	N.D.
2-Hexanone	5	N.D.
Hexachlorobutadiene	2	N.D.
Methylene chloride	2	N.D.
4-methyl-2-pentanone	2	N.D.
Styrene	2	N.D.
Tetrachloroethene	5	N.D.
Toluene	2	N.D.
1,1,2,2-Tetrachloroethane	5	N.D.
1,1,1-Trichloroethane	2	N.D.
1,1,2-Trichloroethane	2	N.D.
Trichloroethene	2	N.D.
Trichlorofluoromethane	2	N.D.
1,1,1,2-Tetrachloroethane	2	N.D.
1,2,3-Trichloropropane	2	N.D.
1,2,4-Trimethylbenzene	2	N.D.
1,3,5-Trimethylbenzene	2	N.D.
1,2,3-Trichlorobenzene	2	N.D.
1,2,4-Trichlorobenzene	2	N.D.
Isopropylbenzene	2	N.D.
p-Isopropyltoluene	2	N.D.
n-Propylbenzene	2	N.D.
Napthalene	10	N.D.
Vinyl Acetate	5	N.D.
Vinyl chloride	2	N.D.
Total Xylenes	2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AEA Laboratories, Inc.

Laboratory Director
Arminta P.Priddy

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Date: May 5, 1999

DAI Environmental, Inc.
5 Revere Dr., Suite 310
Northbrook, IL 60062
Attention: Rick Varnos

Project: Mae Yard 18

Enclosed are the results from 1 water sample received at Great Lakes Analytical on April 28, 1999. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9040515-01	Water, MW-3	4/27/99	BTEX, EPA 5030/8021

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

9040515.01.DAI <1>

printed 09/28/2007 1:14PM by spa1131 pr 101/256

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

DAI Environmental, Inc.	Client Project ID:	Mse Yard 16		Sampled:	Apr 27, 1999
5 Revere Dr., Suite 310	Matrix Descript:	Water		Received:	Apr 28, 1999
Northbrook, IL 60062	Analysis Method:	BTEX, EPA 5030/8021			
Attention: Rick Vamos	First Sample #:	9040515-01		Analyzed:	May 3, 1999
				Reported:	May 5, 1999

BTEX ANALYSIS (EPA 8021)

Sample Number	Sample Description	Benzene ug/L (ppb)	Toluene ug/L (ppb)	Ethyl Benzene ug/L (ppb)	Xylenes ug/L (ppb)
9040515-01	MW-3	N.D.	N.D.	N.D.	N.D.
Detection Limits:		0.50	0.50	0.50	0.50

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

904051501.DAI <1>

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; New York DOH-11487;
USACE; Wisconsin DNR-999917160

printed 08/20/2007 4:44PM by epa4431 p. 182/256

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

Bu[redacted]Grov[redacted]5008[redacted]5
(847) 808-7766
FAX (847) 808-7772

[redacted]ook[redacted]I 53[redacted]
(414) 798-1039
FAX (414) 798-1088

Client: DAI Environmental
Address: 5 Revere Drive Suite 310
Northbrook, IL 60062
Report to: Rick Vamos
Phone #: (847) 498-6910
Fax #: (847) 498-6911

Bill To: Same
Address:
State & Program: IL
Phone #: ( )
Fax #: ( )

TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY < 24 HRS.
DATE RESULTS NEEDED: 5-5-99
TEMPERATURE UPON RECEIPT: 7.1
AIR BILL NO. GLAPIU

Project: MSC Yard 18
Sampler: D. Bradfield
PO/Quote #: 6213

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	BTEX-8021	PNA's	ANALYSIS TYPE	SAMPLE CONTROL: CHECKED/BROKEN	MERCHED/SEALED	GOOD CONDITION	LABORATORY ID NUMBER
1	MW-3	4/27	1545	GW	HCL in VOC	2	1-40ml 1-l	X	X				/	9840515-01
2														
3														
4														
5														
6														
7														
8														
9														
10														

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
[signature]		[signature]	4-28 1050	[signature]	4-28 1535	[signature]	4-28

COMMENTS: HOLD PNA'S. Contact R. Vamos Prior to analysis

PAGE 1 OF 1

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Date: May 25, 1999

DAI Environmental, Inc.
5 Revere Dr., Suite 310
Northbrook, IL 60062
Attention: Dan Bradfield

Project: MSC Yard 18

Enclosed are the results from 1 water sample received at Great Lakes Analytical on April 19, 1999. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9050268-01	Water: MW-3	4/27/99	Lead, EPA 3015/7421

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-84001; New York DOH-11487; USACE; Wisconsin DNR-999917160

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

DAI Environmental, Inc.	Client Project ID:	MSC Yard 18	Sampled: Apr 27, 1999
5 Revere Dr., Suite 310	Sample Descript:	Water: MW-3	Received: Apr 19, 1999
Northbrook, IL 60062			
Attention: Dan Bradfield	Lab Number:	9050268-01	Analyzed: May 20, 1999
			Reported: May 25, 1999

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
[illegible]	[illegible]	[illegible]	[illegible]

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

9050268001.DAI <1>

GREAT LAKES ANALYTICAL

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Buffalo Grove, IL 60089-4505
(847) 808-7766
FAX (847) 808-7772

20725 Watertown Road
Brookfield, WI 53501
(414) 798-1030
FAX (414) 798-1088

CHAIN OF CUSTODY REPORT

Client: DAI Environmental
Address: 5 Revere Drive Suite 310
Northbrook, IL 60062
Report to: Rick Vamos
Phone #: (847) 498-6970
Fax #: (847) 498-6911

Bill To: Same
Address:
State & Program: IL
Phone #: ( )
Fax #: ( )

TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY < 24 HRS.
DATE RESULTS NEEDED: 5-5-99
TEMPERATURE UPON RECEIPT: 7.1
AIR BILL NO. GLAP(U)

Project: MSC Yard 18
Sampler: D. Bradfield
PO/Quote #: 6213

	FIELD ID. LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	BTEX 8021	PNAs									SAMPLE CONTROL: CHARGED BOTTLES	SAMPLE CONTROL: ARRIVED SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORATORY ID NUMBER
1	MW-3	4/27	1545	GW	HCL in VOC	2	1-40ml 1-L	X	X												9805150
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

STAND. TOTAL

RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME
RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED
DATE / TIME	DATE / TIME	DATE / TIME	DATE / TIME

COMMENTS: HOLD PNA'S: Contact R. Vamos Prior to analysis

PAGE 1 OF 1

AEA
LABORATORIES, INC.
DBA: AMERICAN-AYMENA LABORATORIES

LABORATORY DATA REPORT

CLIENT **DAI**
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569

PROJECT NAME	: **MSC YARD 18**
NUMBER#	: 6213
TASK ORDER	:
ATTN	: David Patton
RECEIVED	: 05/07/99
REPORTED	: 05/21/99
FILE ID#	: 99005079 THRU 99005092

PROJECT SUMMARY:

Analyses were performed in accordance with the methods found in the USEPA publication: Test Methods for Evaluating Solid Waste, Physical/Chemical methods, SW- 846, 3rd Edition, December 1996. Specific method references are listed on the analytical report.

Results have been expressed on a "wet" weight (as recived) basis except where otherwise specified .

All analyses were performed within established holding times, and all Quality Control criteria as outlined in the methods have been met.

LABORATORY DIRECTOR

Inv# 52423

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES
LABORATORY TESTING OF SOIL WATER AND HAZARDOUS WASTE
6600 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524
Tel.: 773-693-6060 Fax: 773-693-6763 888-AEA-TEST
Web: http://www.aeatest.com

CHAIN OF CUSTODY

Client:	DAI Environmental	Project Name:	MSL Yard 18
Address:	5 Revere Drive, Suite 310 Northbrook, Illinois 60062	Sampler Name:	Dan Bradfield
		Project #:	6213
Report to:	David Patton	Time Period:	(5 Day) 4 Day 3 Day 2 Day 1 Day <24Hr.
Phone #:	(847) 498-6910 Fax #: (847) 498-6911	Date Needed:	Need 5day T/O! 4:00PM 5-14-98

	Field ID; Location	Matrix	Date Time	Type Cont.	# Cont.	Parameters Requested	AEA ID #
1	SB-10 1'-3'	S	5-6-99	(2) D (2) A	4	BTEX 8021 PNAs 8310 TCLP Lead Total Lead	Hold
2	SB-10 8'10'	S	5-6-99	(2) D (2) A	4	BTEX PNAs TCLP Lead Total Lead	Hold
3	SB-11 1'-3'	S	5-6-99	(2) D (2) A	4	BTEX PNAs TCLP Lead Total Lead	Hold
4	SB-11 8'-10'	S	5-6-99	(2) D (2) A	4	BTEX PNAs TCLP Lead Total Lead	Hold
5	SB-12 1'-3'	S	5-6-99	(2) D (2) A	4	" (Same as above)	Hold
6	SB-12 8'-10	S	5-6-99	"	4	" "	Hold
7	SB-13 1'-3'	S	5-6-99	"	4	" "	Hold
8	SB-13 8'-10'	S	5-6-99	"	4	" "	Hold
9	SB-14 1'-3'	S	5-6-99	"	4	" BTEX " PNAs " TCLP Lead " Total Lead	Analyze
10	SB-14 8'-10'	S	5-6-99	"	4	" Same as above	Analyze
11	SB-15 1'-3'	S	5-6-99	"	4	" "	Analyze
12	SB-15 8'-10'	S	5-6-99	"	4	" "	Analyze
13	MW-1	W	5-6-99	500 ml	1	Total Lead	Analyze
14	MW-4	W	5-6-99	500 ml	1	Total Lead	Analyze
15							

(PLEASE FILL COMPLETELY)

Sample Preserved: (Y)/N — Condition of Sample(s): (Good) - Violated
Preservative Type: Y — Temp. of Container °C: 4°C

GLOSSARY:
MATRIX=Soil(S), Air(A), Water(W), Drinking Water(DW), Wipe(P), Other(O). A=Accept, R=Reject
CONTAINER=Kerf Vial(A), 60ml Vial(B), 2oz(C), 4oz(D), 8oz(E), 1Liter(F), Glass(G), Plastic(P), Air Tube(T), Wipe(W)
PRESERVATIVE=HCl, HNO3, H2SO4, NaOH, MeOH, Other(O). I=Ice. N/A=Not Applicable

Relinquished by: [signature]	Date/Time: 5-7 / 11:00PM	Accepted by: [signature]	
Relinquished by:	Date/Time: 11:30 pm	Accepted by:	

Comments: Please Hold Analysis on Samples [redacted] until Further Notice
Need Analysis by 4:00PM 5-14-98 !! SB 10 - SB-13

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AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-8911
Attn: David Patton

First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID Lab Number Description Method	Analyte	MDL (dry wt.)	SB-10 AE05079 SOIL SAMPLE, 1-3' Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	12.4	%	05/10/99	CC
SW-846 6010B	Lead	0.0228	4.32	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	0.001	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	Polynuclear Aromatics by 8310	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.285	< Stated MDL		05/20/99	MG
	Acenaphthene	0.479	< Stated MDL		05/20/99	MG
	Anthracene	0.372	0.563		05/20/99	MG
	Fluoranthene	0.315	6.507		05/20/99	MG
	Fluorene	0.628	< Stated MDL		05/20/99	MG
	Pyrene	0.612	6.880		05/20/99	MG
	Acenaphthylene	0.714	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.307	1.339		05/20/99	MG
	Phenanthrene	0.341	3.444		05/20/99	MG
	Benzo (a) anthracene	0.0297	2.059		05/20/99	MG
	Benzo (a) pyrene	0.0466	1.572		05/20/99	MG
	Benzo (b) fluoranthene	0.0411	1.982		05/20/99	MG
	Benzo (k) fluoranthene	0.0388	1.008		05/20/99	MG
	Chrysene	0.0342	2.146		05/20/99	MG
	Dibenzo (a,h) anthracene	0.0685	1.163		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0981	1.160		05/20/99	MG
SW-846 8021B	BTEX by 8021B	-	-	mg/kg	05/20/99	MG
	Benzene	0.00315	< Stated MDL		05/20/99	MG
	Toluene	0.00315	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.00315	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.00315	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.00315	< Stated MDL		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

8500 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524 • Tel.: 773-693-8030 • Fax: 773-693-8783 • 888-AEA-TEST • http://www.aeatest.com

AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-6911
Attn: David Patton

First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MBC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-10			
Lab Number			AE05080			
Description			SOIL SAMPLE, 8-10'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	17.2	%	05/19/99	CC
SW-846 6010B	Lead	0.0239	4.32	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	0.006	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0298	< Stated MDL		05/20/99	MG
	Acenaphthene	0.050	< Stated MDL		05/20/99	MG
	Anthracene	0.0388	0.007		05/20/99	MG
	Fluoranthene	0.0328	0.019		05/20/99	MG
	Fluorene	0.0853	< Stated MDL		05/20/99	MG
	Pyrene	0.0638	0.013		05/20/99	MG
	Acenaphthylene	0.0745	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.032	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0356	0.017		05/20/99	MG
	Benzo (a) anthracene	0.00309	0.011		05/20/99	MG
	Benzo (a) pyrene	0.00476	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.00428	0.009		05/20/99	MG
	Benzo (k) fluoranthene	0.00406	0.004		05/20/99	MG
	Chrysene	0.00357	0.007		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00714	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0102	< Stated MDL		05/20/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/20/99	MG
	Benzene	0.0031	< Stated MDL		05/20/99	MG
	Toluene	0.0031	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.0031	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.0031	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.0031	< Stated MDL		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

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AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-8911
Attn: David Patton

First Lab Number: 005078
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-11			
Lab Number			AE05061			
Description			SOIL SAMPLE, 1-3'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	30.2	%	05/19/99	CC
SW-846 6010B	Lead	0.0287	3.02	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	Polynuclear Aromatics by 8310	-	-	mg/kg	05/20/99	MG
-	Naphthalene	0.0357	< Stated MDL		05/20/99	MG
	Acenaphthene	0.0601	< Stated MDL		05/20/99	MG
	Anthracene	0.0466	< Stated MDL		05/20/99	MG
	Fluoranthene	0.0395	< Stated MDL		05/20/99	MG
	Fluorene	0.0785	< Stated MDL		05/20/99	MG
	Pyrene	0.0766	< Stated MDL		05/20/99	MG
	Acenaphthylene	0.0895	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.0385	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0428	< Stated MDL		05/20/99	MG
	Benzo (a) anthracene	0.00372	< Stated MDL		05/20/99	MG
	Benzo (a) pyrene	0.00572	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.00515	< Stated MDL		05/20/99	MG
	Benzo (k) fluoranthene	0.00486	< Stated MDL		05/20/99	MG
	Chrysene	0.00429	< Stated MDL		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00858	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0123	< Stated MDL		05/20/99	MG
SW-846 8021B	BTEX by 8021B	-	-	mg/kg	05/20/99	MG
-	Benzene	0.0031	0.008		05/20/99	MG
	Toluene	0.0031	0.020		05/20/99	MG
	Ethyl Benzene	0.0031	0.046		05/20/99	MG
	Meta & Para Xylene	0.0031	0.049		05/20/99	MG
	Ortho Xylene	0.0031	0.068		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

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AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-6911
Attn: David Patton

First Lab Number: 035079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID Lab Number Description Method	Analyte	MDL (dry wt.)	SB-11 AE05082 SOIL SAMPLE, 8-10' Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	16.5	%	05/19/99	CC
SW-846 6010B	Lead	0.0240	4.07	mg/kg	05/21/99	GM
SW-846/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0286	< Stated MDL		05/20/99	MG
	Acenaphthene	0.050	< Stated MDL		05/20/99	MG
	Anthracene	0.0388	0.004		05/20/99	MG
	Fluoranthene	0.0328	0.025		05/20/99	MG
	Fluorene	0.0653	< Stated MDL		05/20/99	MG
	Pyrene	0.0538	0.015		05/20/99	MG
	Acenaphthylene	0.0745	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.032	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0356	0.011		05/20/99	MG
	Benzo (a) anthracene	0.00309	0.009		05/20/99	MG
	Benzo (a) pyrene	0.00476	0.007		05/20/99	MG
	Benzo (b) fluoranthene	0.00428	0.009		05/20/99	MG
	Benzo (k) fluoranthene	0.00405	0.004		05/20/99	MG
	Chrysene	0.00357	0.007		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00714	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0102	< Stated MDL		05/20/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/20/99	MG
	Benzene	0.0031	0.157		05/20/99	MG
	Toluene	0.0031	0.108		05/20/99	MG
	Ethyl Benzene	0.0031	0.129		05/20/99	MG
	Meta & Para Xylene	0.0031	0.865		05/20/99	MG
	Ortho Xylene	0.0031	0.743		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

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AEA LABORATORIES, INC.

DBA: AMERICAN-ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-6911
Attn: David Patton

First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-12			
Lab Number			AE05083			
Description			SOIL SAMPLE, 1-3'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	18.9	%	05/19/99	CC
SW-846 6010B	Lead	0.0247	6.17	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	Polynuclear Aromatics by 8310	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0308	< Stated MDL		05/20/99	MG
	Acenaphthene	0.0517	< Stated MDL		05/20/99	MG
	Anthracene	0.0401	< Stated MDL		05/20/99	MG
	Fluoranthene	0.0339	< Stated MDL		05/20/99	MG
	Fluorene	0.0675	< Stated MDL		05/20/99	MG
	Pyrene	0.0659	< Stated MDL		05/20/99	MG
	Acenaphthylene	0.077	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.0331	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0368	< Stated MDL		05/20/99	MG
	Benzo (a) anthracene	0.0032	< Stated MDL		05/20/99	MG
	Benzo (a) pyrene	0.00492	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.00443	< Stated MDL		05/20/99	MG
	Benzo (k) fluoranthene	0.00418	< Stated MDL		05/20/99	MG
	Chrysene	0.00369	< Stated MDL		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00738	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0106	< Stated MDL		05/20/99	MG
SW-846 8021B	BTEX by 8021B	-	-	mg/kg	05/20/99	MG
	Benzene	0.0033	< Stated MDL		05/20/99	MG
	Toluene	0.0033	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.0033	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.0033	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.0033	< Stated MDL		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
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Arminta P. Priddy
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First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 5213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-12			
Lab Number			AE05084			
Description			SOIL SAMPLE, 8-10'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	12.3	%	05/19/99	CC
SW-846 6010B	Lead	0.0228	0.422	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0285	< Stated MDL		05/20/99	MG
	Acenaphthene	0.0479	< Stated MDL		05/20/99	MG
	Anthracene	0.0372	< Stated MDL		05/20/99	MG
	Fluoranthene	0.0315	< Stated MDL		05/20/99	MG
	Fluorene	0.0626	< Stated MDL		05/20/99	MG
	Pyrene	0.0511	< Stated MDL		05/20/99	MG
	Acenaphthylene	0.0714	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.0307	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0341	< Stated MDL		05/20/99	MG
	Benzo (a) anthracene	0.00296	< Stated MDL		05/20/99	MG
	Benzo (a) pyrene	0.00456	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.0041	< Stated MDL		05/20/99	MG
	Benzo (k) fluoranthene	0.00388	< Stated MDL		05/20/99	MG
	Chrysene	0.00342	< Stated MDL		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00684	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0098	< Stated MDL		05/20/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/20/99	MG
	Benzene	0.00316	< Stated MDL		05/20/99	MG
	Toluene	0.00315	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.00315	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.00316	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.00316	< Stated MDL		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
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Arminta P. Priddy
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First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 8213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-13			
Lab Number			AE05085			
Description			SOIL SAMPLE, 1-3'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	12.2	%	05/19/99	CC
SW-846 6010B	Lead	0.0228	0.326	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0282	< Stated MDL		05/20/99	MG
	Acenaphthene	0.0475	< Stated MDL		05/20/99	MG
	Anthracene	0.0368	< Stated MDL		05/20/99	MG
	Fluoranthene	0.0312	< Stated MDL		05/20/99	MG
	Fluorene	0.062	< Stated MDL		05/20/99	MG
	Pyrene	0.0608	< Stated MDL		05/20/99	MG
	Acenaphthylene	0.0707	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.0304	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0338	< Stated MDL		05/20/99	MG
	Benzo (a) anthracene	0.00294	< Stated MDL		05/20/99	MG
	Benzo (a) pyrene	0.00452	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.00407	< Stated MDL		05/20/99	MG
	Benzo (k) fluoranthene	0.00384	< Stated MDL		05/20/99	MG
	Chrysene	0.00339	< Stated MDL		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00578	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.00972	< Stated MDL		05/20/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/20/99	MG
	Benzene	0.0033	< Stated MDL		05/20/99	MG
	Toluene	0.0033	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.0033	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.0033	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.0033	< Stated MDL		05/20/99	MG

- Analytes reported on dry weight basis except for Moisture and TCLP Lead.
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First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-13			
Lab Number			AE05086			
Description			SOIL SAMPLE, 8-10'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SW 2540	% Moisture	-	17.9	%	05/10/99	CC
SW-846 6010B	Lead	0.0244	< Stated MDL	mg/kg	05/21/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/21/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/14/99	-	05/14/99	IB
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/20/99	MG
	Naphthalene	0.0303	< Stated MDL		05/20/99	MG
	Acenaphthene	0.0508	< Stated MDL		05/20/99	MG
	Anthracene	0.0394	< Stated MDL		05/20/99	MG
	Fluoranthene	0.0334	< Stated MDL		05/20/99	MG
	Fluorene	0.0664	< Stated MDL		05/20/99	MG
	Pyrene	0.0649	< Stated MDL		05/20/99	MG
	Acenaphthylene	0.0757	< Stated MDL		05/20/99	MG
	Benzo (ghi) perylene	0.0326	< Stated MDL		05/20/99	MG
	Phenanthrene	0.0362	< Stated MDL		05/20/99	MG
	Benzo (a) anthracene	0.00315	< Stated MDL		05/20/99	MG
	Benzo (a) pyrene	0.00484	< Stated MDL		05/20/99	MG
	Benzo (b) fluoranthene	0.00436	< Stated MDL		05/20/99	MG
	Benzo (k) fluoranthene	0.00411	< Stated MDL		05/20/99	MG
	Chrysene	0.00363	< Stated MDL		05/20/99	MG
	Dibenzo (a,h) anthracene	0.00726	< Stated MDL		05/20/99	MG
	Indeno (1,2,3-cd) pyrene	0.0104	< Stated MDL		05/20/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/20/99	MG
	Benzene	0.003	< Stated MDL		05/20/99	MG
	Toluene	0.003	< Stated MDL		05/20/99	MG
	Ethyl Benzene	0.003	< Stated MDL		05/20/99	MG
	Meta & Para Xylene	0.003	< Stated MDL		05/20/99	MG
	Ortho Xylene	0.003	< Stated MDL		05/20/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
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First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-14			
Lab Number			AE05087			
Description			SOIL SAMPLE, 1-3'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	13.6	%	05/12/99	CC
SW-846 6010B	Lead	0.0232	2.73	mg/kg	05/12/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/12/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/07/99	-	05/07/99	AS
SW-846, 8310	Polynuclear Aromatics by 8310	-	-	mg/kg	05/13/99	MG
	Naphthalene	0.095	< Stated MDL		05/13/99	MG
	Acenaphthene	0.160	< Stated MDL		05/13/99	MG
	Anthracene	0.124	< Stated MDL		05/13/99	MG
	Fluoranthene	0.105	< Stated MDL		05/13/99	MG
	Fluorene	0.209	< Stated MDL		05/13/99	MG
	Pyrene	0.204	< Stated MDL		05/13/99	MG
	Acenaphthylene	0.238	< Stated MDL		05/13/99	MG
	Benzo (ghi) perylene	0.102	< Stated MDL		05/13/99	MG
	Phenanthrene	0.114	< Stated MDL		05/13/99	MG
	Benzo (a) anthracene	0.00988	< Stated MDL		05/13/99	MG
	Benzo (a) pyrene	0.0162	< Stated MDL		05/13/99	MG
	Benzo (b) fluoranthene	0.0137	< Stated MDL		05/13/99	MG
	Benzo (k) fluoranthene	0.0129	< Stated MDL		05/13/99	MG
	Chrysene	0.0114	< Stated MDL		05/13/99	MG
	Dibenzo (a,h) anthracene	0.0228	< Stated MDL		05/13/99	MG
	Indeno (1,2,3-cd) pyrene	0.0327	< Stated MDL		05/13/99	MG
SW-846 8021B	BTEX by 8021B	-	-	mg/kg	05/13/99	MG
	Benzene	0.00325	< Stated MDL		05/13/99	MG
	Toluene	0.00325	< Stated MDL		05/13/99	MG
	Ethyl Benzene	0.00325	< Stated MDL		05/13/99	MG
	Meta & Para Xylene	0.00325	< Stated MDL		05/13/99	MG
	Ortho Xylene	0.00325	< Stated MDL		05/13/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
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First Lab Number: 006079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-14			
Lab Number			AE05088			
Description			SOIL SAMPLE, 8-10'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	20.7	%	05/12/99	CC
SW-846 6010B	Lead	0.0252	260	mg/kg	05/12/99	GM
1311/6010B	TCLP LEAD	0.004	3.62	mg/L	05/12/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/07/99	-	05/07/99	AS
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/13/99	MG
	Naphthalene	0.105	< Stated MDL		05/13/99	MG
	Acenaphthene	0.178	< Stated MDL		05/13/99	MG
	Anthracene	0.137	< Stated MDL		05/13/99	MG
	Fluoranthene	0.116	< Stated MDL		05/13/99	MG
	Fluorene	0.231	< Stated MDL		05/13/99	MG
	Pyrene	0.225	< Stated MDL		05/13/99	MG
	Acenaphthylene	0.263	< Stated MDL		05/13/99	MG
	Benzo (ghi) perylene	0.113	< Stated MDL		05/13/99	MG
	Phenanthrene	0.126	< Stated MDL		05/13/99	MG
	Benzo (a) anthracene	0.0109	< Stated MDL		05/13/99	MG
	Benzo (a) pyrene	0.0168	< Stated MDL		05/13/99	MG
	Benzo (b) fluoranthene	0.0151	< Stated MDL		05/13/99	MG
	Benzo (k) fluoranthene	0.0143	< Stated MDL		05/13/99	MG
	Chrysene	0.0126	< Stated MDL		05/13/99	MG
	Dibenzo (a,h) anthracene	0.0252	< Stated MDL		05/13/99	MG
	Indeno (1,2,3-cd) pyrene	0.0361	< Stated MDL		05/13/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/13/99	MG
	Benzene	0.00345	< Stated MDL		05/13/99	MG
	Toluene	0.00345	< Stated MDL		05/13/99	MG
	Ethyl Benzene	0.00345	< Stated MDL		05/13/99	MG
	Meta & Para Xylene	0.00345	< Stated MDL		05/13/99	MG
	Ortho Xylene	0.00345	< Stated MDL		05/13/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
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First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-15			
Lab Number			AE05089			
Description			SOIL SAMPLE, 1-3'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SM 2540	% Moisture	-	13.4	%	05/12/99	CC
SW-846 6010B	Lead	0.0231	19.9	mg/kg	05/12/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/12/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/07/99	-	05/07/99	AS
SW-846, 8310	Polynuclear Aromatics by 8310	-	-	mg/kg	05/13/99	MG
	Naphthalene	0.095	< Stated MDL		05/13/99	MG
	Acenaphthene	0.180	< Stated MDL		05/13/99	MG
	Anthracene	0.124	0.015		05/13/99	MG
	Fluoranthene	0.105	0.152		05/13/99	MG
	Fluorene	0.209	< Stated MDL		05/13/99	MG
	Pyrene	0.204	0.165		05/13/99	MG
	Acenaphthylene	0.238	< Stated MDL		05/13/99	MG
	Benzo (ghi) perylene	0.102	0.082		05/13/99	MG
	Phenanthrene	0.114	0.051		05/13/99	MG
	Benzo (a) anthracene	0.00988	0.061		05/13/99	MG
	Benzo (a) pyrene	0.0152	0.083		05/13/99	MG
	Benzo (b) fluoranthene	0.0137	0.084		05/13/99	MG
	Benzo (k) fluoranthene	0.0129	0.040		05/13/99	MG
	Chrysene	0.0114	0.092		05/13/99	MG
	Dibenzo (a,h) anthracene	0.0228	0.050		05/13/99	MG
	Indeno (1,2,3-cd) pyrene	0.0327	0.058		05/13/99	MG
SW-846 8021B	BTEX by 8021B	-	-	mg/kg	05/13/99	MG
	Benzene	0.0035	< Stated MDL		05/13/99	MG
	Toluene	0.0035	< Stated MDL		05/13/99	MG
	Ethyl Benzene	0.0035	< Stated MDL		05/13/99	MG
	Meta & Para Xylene	0.0035	< Stated MDL		05/13/99	MG
	Ortho Xylene	0.0035	< Stated MDL		05/13/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

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Attn: David Patton

First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 6213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			SB-15			
Lab Number			AE05080			
Description			SOIL SAMPLE, 8-10'			
Method	Analyte	MDL (dry wt.)	Result (dry wt.)	Unit	Analysis Date	Analyst
SW 2540	% Moisture	-	16.7	%	05/12/99	CC
SW-846 6010B	Lead	0.0240	< Stated MDL	mg/kg	05/12/99	GM
1311/6010B	TCLP LEAD	0.004	< Stated MDL	mg/L	05/12/99	GM
SW-846 3550B	SONICATION PREP-PNA	-	05/07/99	-	05/07/99	AS
SW-846, 8310	**Polynuclear Aromatics by 8310**	-	-	mg/kg	05/13/99	MG
	Naphthalene	0.100	< Stated MDL		05/13/99	MG
	Acenaphthene	0.166	< Stated MDL		05/13/99	MG
	Anthracene	0.130	< Stated MDL		05/13/99	MG
	Fluoranthene	0.110	< Stated MDL		05/13/99	MG
	Fluorene	0.220	< Stated MDL		05/13/99	MG
	Pyrene	0.214	< Stated MDL		05/13/99	MG
	Acenaphthylene	0.250	< Stated MDL		05/13/99	MG
	Benzo (ghi) perylene	0.108	< Stated MDL		05/13/99	MG
	Phenanthrene	0.120	< Stated MDL		05/13/99	MG
	Benzo (a) anthracene	0.0104	< Stated MDL		05/13/99	MG
	Benzo (a) pyrene	0.016	< Stated MDL		05/13/99	MG
	Benzo (b) fluoranthene	0.0144	< Stated MDL		05/13/99	MG
	Benzo (k) fluoranthene	0.0136	< Stated MDL		05/13/99	MG
	Chrysene	0.012	< Stated MDL		05/13/99	MG
	Dibenzo (a,h) anthracene	0.024	< Stated MDL		05/13/99	MG
	Indeno (1,2,3-cd) pyrene	0.0344	< Stated MDL		05/13/99	MG
SW-846 8021B	**BTEX by 8021B**	-	-	mg/kg	05/13/99	MG
	Benzene	0.00325	< Stated MDL		05/13/99	MG
	Toluene	0.00325	< Stated MDL		05/13/99	MG
	Ethyl Benzene	0.00325	< Stated MDL		05/13/99	MG
	Meta & Para Xylene	0.00325	< Stated MDL		05/13/99	MG
	Ortho Xylene	0.00325	< Stated MDL		05/13/99	MG

Analytes reported on dry weight basis except for Moisture and TCLP Lead.
AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

6609 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524 • Tel.: 773-693-8030 • Fax: 773-693-8783 • 888-AEA-TEST • http://www.aeatest.com

AEA
LABORATORIES, INC.
DBA: AMERICAN ATHENA LABORATORIES

DAI
5 Revere Drive, Suite 310
Northbrook, IL 60062-1569
Fax: (847) 498-6911
Attn: David Patton

First Lab Number: 005079
Sample Matrix: SOIL
Project Name: MSC YARD 18
Project No.: 5213

Sampled: 05/06/99
Received: 05/07/99
Date Reported: 05/21/99

ANALYTICAL REPORT

Field ID			MW-1			
Lab Number			AE05091			
Description			WATER SAMPLE			
Method	Analyte	MDL	Result	Unit	Analysis Date	Analyst
SW-846 6010B	Lead	0.0004	< Stated MDL	mg/L	05/12/99	GM

Field ID			MW-4			
Lab Number			AE05092			
Description			WATER SAMPLE			
Method	Analyte	MDL	Result	Unit	Analysis Date	Analyst
SW-846 6010B	Lead	0.0004	< Stated MDL	mg/L	05/12/99	GM

AEA Laboratories, Inc.

Arminta P. Priddy
Laboratory Director

8609 W. Bryn Mawr, Suite 201, Chicago, IL 60631-3524 • Tel.: 773-693-5000 • Fax: 773-693-5783 • 888-AEA-TEST • http://www.aealab.com

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Date: May 21, 1999

DAI Environmental, Inc.
5 Revere Dr., Suite 310
Northbrook, IL 60062
Attention: David Patter

Project: MSC-Yard 18

Enclosed are the results from 1 water sample received at Great Lakes Analytical on May 17, 1999. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9050241-01	Water: MW-3	5/14/99	PNA, EPA 8310

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-84001; New York DOH-11461;
USACE; Wisconsin DNR-999917/60

GREAT LAKES ANALYTICAL
1380 Busch Parkway
Buffalo Grove, Illinois 60089
Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

DAI Environmental, Inc.	Client Project ID:	MSC-Yard 18	Sampled:	May 14, 1999
5 Revere Dr., Suite 310	Sample Descript:	Water: MW-3	Received:	May 17, 1999
Northbrook, IL 60062	Analysis Method:	EPA 8310	Extracted:	May 18, 1999
Attention: David Pattor	Lab Number:	9060241-01	Analyzed:	May 20, 1999
			Reported:	May 21, 1999

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit ug/L (ppb)	Sample Results ug/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	4.0	N.D.
Anthracene	0.20	N.D.
Benzo (a) anthracene	0.010	N.D.
Benzo (a) pyrene	0.050	N.D.
Benzo (b) fluoranthene	0.020	N.D.
Benzo (ghi) perylene	0.080	N.D.
Benzo (k) fluoranthene	0.050	N.D.
Chrysene	0.050	N.D.
Dibenzo (a,h) anthracene	0.020	N.D.
Fluoranthene	1.0	N.D.
Fluorene	1.0	N.D.
Indeno (1,2,3-cd) pyrene	0.20	N.D.
Naphthalene	3.0	N.D.
Phenanthrene	0.30	N.D.
Pyrene	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

9060241.01.DAI <1>

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

1980 Busch Parkway
Buffalo Grove, IL 60089-4505
(847) 808-7766
FAX (847) 808-7772

20725 Watertown Road
Brookfield, WI 53501
(414) 798-1030
FAX (414) 798-1068

Client: DAI Environmental, Inc
Bill To: Same
TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY < 24 HRS.
Address: 5 Revere Drive Suite 310
Northbrook, IL 60062
Address:
DATE RESULTS NEEDED: 5-24-99
TEMPERATURE UPON RECEIPT: 7.1
Report to: David Patton
Phone #: (847) 495-6510
Fax #: (847) 498-6511
State & Program:
Phone #: ( )
Fax #: ( )
AIR BILL NO. GLA910
Project: MSC - Yard 18
Sampler: D. Brodfield
PO/Quote #: 6213

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	PNAs										SAMPLE CONTROL: CHECKED BROKEN / AUTHORITY SEALED / GOOD CONDITION	LABORATORY ID NUMBER
1	MW-3	5/14/99	0915	W	none	1	[illegible]	X										X	9050241-01
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
[signature]		[signature]	1050	[signature]	5-17 1530	[signature]	8-17

COMMENTS:

PAGE one OF one

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APPENDIX B
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION

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The following demonstrates that the engineered barrier is in compliance with 35 IAC 742.1105.

742.1105a: The engineered barrier is not natural attenuation, access control, or a point of use treatment. Direct human exposure to groundwater will be eliminated through implementation of the Village of Lyons Ordinance No. 5-18-99-3 as an institutional control.

742.1105b: The engineered barrier is used in conjunction with a Tier 2 determination of remediation objectives.

742.1105c (1): The soil component of the groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance No. 5-18-99-3 as an institutional control.

742.1105c (2): The soil ingestion exposure route will be eliminated through an asphalt cap.

742.1105c (3): The soil inhalation exposure route will be eliminated through an asphalt cap.

742.1105c (4): The groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance No. 5-18-99-3 as an institutional control.

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APPENDIX C
GROUNDWATER INGESTION PATHWAY EXCLUSION DEMONSTRATION

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The groundwater ingestion pathway can be excluded if the requirements of 35 IAC 742.300, 742.305, 742.320, and 742.1015 are met. The meeting of these requirements are discussed below.

742.305a: This part requires that the sum of the concentrations of concern (or organic contaminants) do not exceed the soil attenuation capacity. The soil attenuation capacity is defined in 742.215. For the purposes of this analysis, the soil attenuation capacity is equal to the natural organic carbon concentration of the soil. Table 4 in the Section 3.2.3 reports the Fraction of Organic Carbon (f_{oc}) observed in twenty-four (24) soil samples collected from the site. Based upon these results, the average f_{oc} of the subsurface soils at the site is 5.5% which is equivalent to 55,000-mg/Kg. Review of the soil sampling and analysis results summarized in Table 3 of the text of this report clearly indicate that the sum of all organic compounds observed at any discrete sampling point is significantly below the soil attenuation capacity (55,000-mg/Kg) of the soils. Therefore, the soil attenuation capacity is not exceeded at any location on the site.

742.305b: This part requires that the sum of concentrations of any organic contaminants of concern remaining in the soil do not exceed the soil saturation limit as determined in 742.220. The soil saturation limits for compounds whose melting points are less than 30°C are provided in 742 Appendix A, Table A. Table F-1 compares the maximum detected concentrations of the contaminants of concern to those provided in 742 Appendix A, Table A, and indicates that none of the observed concentrations exceed the soil saturation limit.

Table C-1. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit

Compound	Maximum Observed Concentration[1] (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	5.93	870
Ethylbenzene	15.1	400
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

[1](see Table 6 in text of report)
NA - A Soil Saturation Limit has not been established for this compound in 742 Appendix A, Table A

742.305c: This requires that none of the soils exhibit any of the characteristics of reactivity for hazardous wastes. There is no evidence nor reason to believe that any soils beneath the site exhibit the characteristics of reactivity.

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742.305d: This requires that none of the soils exhibit a pH less than 2.0 or greater than 12.5. Twenty-four (24) soil samples were analyzed for pH via USEPA Method 9045. The results of these analyses were summarized in Table 4 in Section 3.2.3 of the report. The pH of these samples ranged from 6.15 to 8.37.

742.305e: This requires that none of the soils are hazardous wastes by virtue of the characteristic of toxicity for the following compounds: arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver. The TCLP Lead concentrations observed in the thirty-five (35) soil samples were below the hazardous regulatory level (5-mg/L).

742.320a: This requires that the above-discussed requirements of 742.305 are met.

742.320b: This requires that any free product has been removed by corrective action to the maximum extent possible. No free product was observed during the investigations.

742.320c: This requires that the source of the release is not located within the minimum or maximum setback zone of a potable water supply well nor within a regulated recharge area of a potable water supply well. The Village of Lyons Ordinance No. 5-18-99-3 prohibiting use of groundwater as a potable water supply well insures adherence to this requirement. A certified copy of the ordinance is included as Attachment A to this appendix.

742.320d: A demonstration of compliance with 742.1015 is included below.

742.320e: This requirement addresses the potential contamination of an existing water supply well. As previously discussed, no potable groundwater supply wells presently exist, nor will they be allowed in the future by virtue of the ordinance, and therefore, this requirement is not applicable.

742.320f: This requirement states that the concentration of any contaminants in groundwater discharging into a surface water must meet the applicable surface water quality standard. A demonstration of compliance with this requirement is included in Section 7.0 of this report.

742.1015a: This requirement ensures that if the installation of public potable water supply wells by a unit of local government is not expressly prohibited, a Memorandum of Understanding (MOU) is entered into. The Village of Lyons Ordinance No. 5-18-99-3 expressly prohibits "The use of attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation or drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons. Because this ordinance specifically prohibits the Village of Lyons from using groundwater as a potable water supply in the future, a MOU is not required.

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742.1015b(1): A certified copy of the ordinance is included as Attachment A to this Appendix.

742.1015b(2): A scaled map showing the extent of groundwater contamination, based on TACO R26 modeling is provided as Attachment B to this Appendix.

742.1015b(3): See Section 4.0 of this report.

742.1015b(4): A scaled map showing the extent of groundwater contamination, based on TACO R26 modeling is provided as Attachment B to this Appendix.

742.1015b(5): Material Service Corporation (MSC), the owner of the site, also owns the property to the west onto which contaminated groundwater has migrated.

742.1015b(6): MSC (the site owner) owns the property onto which the contaminated groundwater has migrated. Therefore, this requirement does not apply.

742.1015c: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015d: The property owner will comply with this requirement and ensure that future property owners will do so as well.

742.1015e: The property owner will comply with this requirement upon receipt of approval of the proposed GROs and SROs from the IEPA.

742.1015f: No MOU has been entered into. See demonstration of compliance with 742.1015a.

742.1015g: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015h: DAI concurs that the three (3) items detailed will be grounds for voidance of the NFR letter.

742.1015i: No MOU has been entered into. See demonstration of compliance with 742.1015a.

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ATTACHMENT A
CERTIFIED COPY OF THE VILLAGE OF LYONS
ORDINANCE No. 5-18-99-3

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CERTIFICATION

STATE OF ILLINOIS)
COUNTY OF COOK)
VILLAGE OF LYONS)

I, WILLIAM J. POLICH, VILLAGE CLERK of the Village of Lyons DO HEREBY CERTIFY that the foregoing:

ORDINANCE NO. 5-18-99-3

is a true and correct copy of AN ORDINANCE now on file in my office, which said ORDINANCE was approved and passed by the President and Board of Trustees of the Village of Lyons, Illinois aforesaid, on the 18TH day of MAY, 1999.

I DO HEREBY FURTHER CERTIFY that the original of which the foregoing is a true and correct copy, is entrusted to my care and safekeeping.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Corporate Seal of the Village of Lyons aforesaid, at the Village of Lyons, in the County of Cook and the State of Illinois, this 26TH day of MAY, 1999.

William J. Polich

William J. Polich
Village Clerk, C.M.C.
Lyons, Illinois

VILLAGE OF LYONS

ORDINANCE NO. 5-18-99-3

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS WELLS FOR POTABLE
WATER SUPPLY

ADOPTED BY THE PRESIDENT
AND BOARD OF TRUSTEES
OF THE
VILLAGE OF LYONS

THIS 18TH DAY OF MAY, 1999

Published in pamphlet form by the
authority of the President and
Board of Trustees of the Village
of Lyons, Cook County, Illinois
this 18th day of May, 1999

ORDINANCE NO. 5-18-99-3

AN ORDINANCE AMMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH PROHIBITS THE USE OF GROUNDWATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER WELLS OR ANY OTHER

WHEREAS, certain properties in the Village of Lyons, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class 1 groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 residential remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the Village of Lyons desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of Properties that are the source of said chemical constituents;

NOW, THEREFORE BE IT ORDAINED BY THE VILLAGE BOARD OF THE CITY VILLAGE OF LYONS:

<u>Section One</u>. Article 7, Chapter 4, Section 2 of the ordinances of the Village of Lyons is repealed and replaced in its entirety by the following:

7-4-2. Use of groundwater as a potable water supply is prohibited.
The use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation or drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons.

A. Penalties.
Any person violating the Provisions of this ordinance shall be subject to a fine of up to $750.00 for each violation.

B. Definitions.
Person is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.
Potable water is any water used for human or domestic consumption including but not limited to, water used for drinking, bathing, swimming, washing dishes or preparing foods.

Memorandum of Understanding. The President of the Village of Lyons is hereby authorized and directed to enter into a Memorandum of Understanding with the Illinois Environmental Protection Agency (Illinois EPA) in which the Village assumes responsibility for tracking remediated sites, notifying the Illinois EPA of changes to this ordinance and taking certain precautions when siting public potable water supply wells.

Section Two: Severability. If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Three: Effective Date. This ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law.

PASSED THIS 18th DAY OF MAY, 1999

AYES: 5

NAYS: 0

ABSENT: One (Trustee TVRDIK)

APPROVED THIS 18th DAY
OF MAY, 1999

David A. Visk
Village President

ATTEST:

William J. Polich, C.M.C.
Village Clerk

ATTACHMENT B
EXTENT OF GROUNDWATER CONTAMINATION

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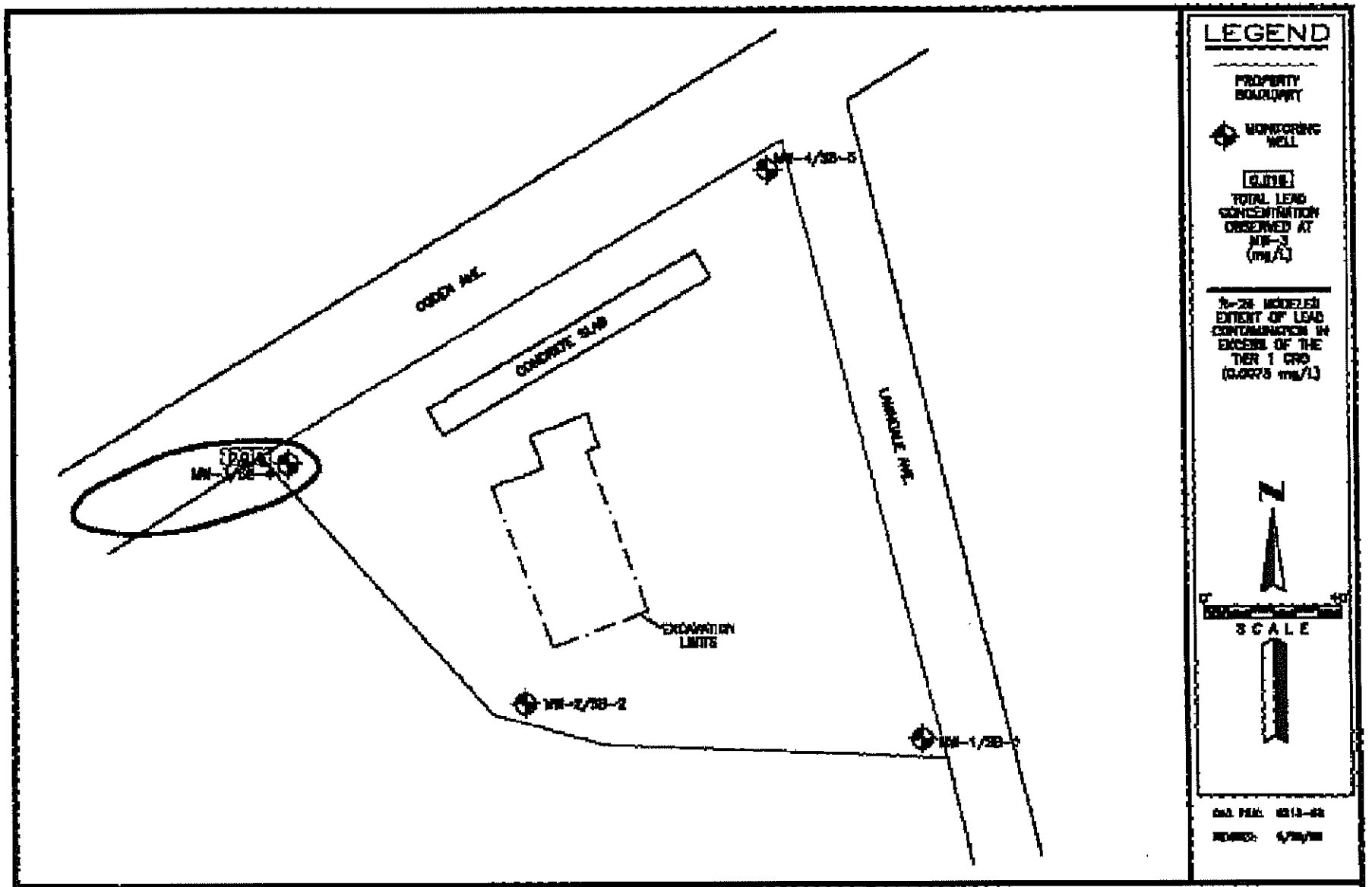

ENDAL	MSC YARD 18 4226 SOUTH LAWNDALE AVE. LYONS, IL	FIGURE C-1 R-26 MODELED EXTENT OF CONTAMINATION

Spreadsheet Calculation Table Appendix D, Attachment B - MSC Yard 15

TACO-Eqn. R25-Calculation of distance x at which contamination will have diluted to concentrations below the Tier 1 Class I GRO

Contaminant	C(source)	x (cm)	alpha-x	alpha-y	alpha-z	Sd	Sw	gamma	K	theta-t	I	U	C(x)	GWcomp
	(mg/L)		cm	cm	cm	cm	cm	degrees	cm/d		gradient	cm/day	(mg/L)	(mg/L)
Lead	0.018	2.004	200.35912	66.7867	10.018456	914	228.6	0	6.54043	0.36	0.0222222	0.4037333	0.0074	0.0075

C(source) = Taken as concentration observed in groundwater sample collected from MW-3
x = Distance required for the observed lead concentration to dilute to a concentration below the Tier 1 GRO
Sd = Source depth (Taken as the depth to bedrock at MW-3 to be conservative)
Sw = Width of the plume perpendicular to groundwater flow direction (taken as 30-ft to be conservative)
K = Hydraulic conductivity taken from analysis of slug tests
theta-t = TACO default for clays
I = Hydraulic Gradient taken from potentiometric surface maps developed by DAI
C(x) = Predicted groundwater concentration at Village Municipal Boundary
C(x) /C(source) = TACO Equation R15
GWcomp = Groundwater Objective at Compliance Point (Tier 1 GRO)

APPENDIX D
LEAD FATE AND TRANSPORT MODELING

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Spreadsheet Calculation Table 1 - MSC Yard 16

TACO-Eqn. R20-Calculation of C(x) and a Tier 2 GSO for Lead - Point of Human Exposure is the Village of Lyons Municipal Boundary

Contaminant	C(source)	x (cm)	alpha-x	alpha-y	alpha-z	Sw	Sd	lambda	K	theta-t	i	U	C(x)	C(x)/C(source)	GWcomp	Tier 2 GSO
	(mg/L)	3800-ft	cm	cm	cm	cm	cm	[illegible]	cm/day		gradient	cm/day	(mg/L)		(mg/L)	(mg/L)
Lead	0.015	115,824	11562.4	3860.8000	578.12	914	228.8	0	6.54048	0.36	0.02222222	0.40373333	3.1E-08	1.9E-04	0.0076	39.0477
Lead	3.62	115,824	11562.4	3860.8000	578.12	914	228.8	0	6.54048	0.36	0.02222222	0.40373333	7.0E-04			

C(source) = Taken as 1 mg/L to calculate C(x)/(source)
C(source) = Taken as concentration observed at SB-14 for demonstration of no adverse impacts at Lyons Municipal Boundary
x = Distance to Village of Lyons Municipal Boundary (assuming westerly g.w. flow direction)
Sd = Source depth (Taken as the depth to bedrock at MW-3 to be conservative)
Sw = Width of the plume perpendicular to groundwater flow direction (taken as 30-ft to be conservative)
K = Hydraulic conductivity taken from analysis of slug tests
theta-t = TACO default for clays
i = Hydraulic Gradient taken from potentiometric surface maps developed by DAI
C(x) = Predicted groundwater concentration at Village Municipal Boundary
C(x) /C(source) = TACO Equation R15
GWcomp = Groundwater Objective at Compliance Point (Tier 1 GRO)

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APPENDIX E
VOC AND PNA FATE AND TRANSPORT MODELING

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Spreadsheet Calculation Table 2 - MSC Yard 18

TACO-Eqn. R28-Calculation of C(x) and C(x)/C(source) - To Village of Lyons Propty Boundary

Contaminant	C(source)	x (cm)	alpha-x	alpha-y	alpha-z	Sw	Sd	lambda	K	theta-fc	i	U	C(x)	C(x)/C(source)
	(mg/L)	300,000	30 cm	300 cm	30 cm	6 cm	6 cm	1/day	6.54E-06	0.36	gradient	cm/day	(mg/L)	
Benzo(a)anthracene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.00051	6.54E-06	0.36	0.022222	0.40373	3.1E-18	3.1E-18
Benzo(a)pyrene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.00065	6.54E-06	0.36	0.022222	0.40373	2.3E-20	2.3E-20
Dibenzo(a,h)anthracene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.00037	6.54E-06	0.36	0.022222	0.40373	8.6E-16	8.6E-16
Indeno(1,2,3-cd)pyrene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.00047	6.54E-06	0.36	0.022222	0.40373	1.4E-17	1.4E-17
Benzene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.0006	6.54E-06	0.36	0.022222	0.40373	1.2E-23	1.2E-23
Ethylbenzene	1	115,824	11582.4	3860.8000	579.12	4,267	304.8	0.003	6.54E-06	0.36	0.022222	0.40373	7.9E-42	7.9E-42

C(source) = Taken as 1 mg/L to calculate C(x)/(source)
x = Distance to Village of Lyons Municipal Boundary (assuming westerly g.w. flow direction)
Sd = Maximum depth bgs of contaminant concentration in excess of Tier 1 SRO
Sw = Width of the plume perpendicular to groundwater flow direction
K = Hydraulic conductivity taken from analysis of slug tests
theta-t = TACO default for clays
i = Hydraulic Gradient taken from potentiometric surface maps developed by DAI
C(x) = Predicted groundwater concentration at Village Municipal Boundary
C(x) /C(source) = TACO Equation R15
GWcomp = Groundwater Objective at Compliance Point (Tier 1 GRO)

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Spreadsheet Calculation Table 3 - MSC Yard 18

TACO-Eqn. R12-SRO for Soil Component of the Groundwater Ingestion Route of Exposure

Contaminant	rhos	theta-t	theta-ws	theta-as	foc	Koc	Ks	K	i	W	H'	Ugw	sig-gw	LF-sw	GWcomp	C(x)/C(source)	GWsource	Calc. T2 SRO	Csat	Req. T2 SRO	Max. Observed Conc.
								(cm/yr)		(cm)		(cm/yr)	(cm)		(mg/L)		(mg/L)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Benzo(a)anthracene	1.7	0.3800	0.17	0.1900	0.002	306000	796	2367.2762	0.02222	4114.8	0.000137	83.05	30	200	0.0012	0.00013	3.1E-08	4.2E+13	3.8E+18	NA	3.8E+18	4.5
Benzo(a)pyrene	1.7	0.3800	0.17	0.1900	0.002	1900000	2940	2367.2762	0.02222	4114.8	4.3E-06	83.05	30	200	0.0006	0.00000	2.3E-08	3.6E+11	1.2E+15	NA	1.2E+15	2.71
Dibenzo(a,h)anthracene	1.7	0.3800	0.17	0.1900	0.002	3600000	7600	2367.2762	0.02222	4114.8	6.0E-07	83.05	30	200	0.0001	0.00000	8.6E-10	3.3E+11	2.2E+15	NA	2.2E+15	2.74
Indeno(1,2,3-c)pyrene	1.7	0.3800	0.17	0.1900	0.002	3470000	8940	2367.2762	0.02222	4114.8	8.8E-06	83.05	30	200	0.0001	0.00043	1.4E-07	3.0E+10	3.3E+17	NA	3.3E+17	13.8
Benzene	1.7	0.3800	0.17	0.1900	0.002	86.9	0.1179	2367.2762	0.02222	4114.8	0.225	83.05	30	200	3.7601	0.000	1.2E-03	4.1E+00	1.1E+00	870	870	0.33
Dibenzofuran	1.7	0.3800	0.17	0.1900	0.002	350	0.728	2367.2762	0.02222	4114.8	0.334	83.05	30	200	1.0661	0.700	7.8E-02	8.8E+40	8.2E+40	400	400	13.1

rhos = TACO default for clays
theta-t = TACO default for clays
theta-ws = water filled soil porosity = TACO default for clays
theta-as =air filled soil porosity calculated by TACO eq. R21
foc = fraction of organic carbon = TACO default for subsurface soils
Koc = compound specific organic carbon partition coefficient taken from TACO Tables
Ks = soil water sorption coefficient calculated via TACO equation R20
K = hydraulic conductivity measured by slug test
i = hydraulic gradient
W = Width of the plume parallell to groundwater flow direction
H' = dimensionless Henry's Law Constant taken from TACO Tables
Ugw = groundwater Darcy velocity via TACO Equation R24
I = Infiltration Rate taken as TACO default
sig-gw = groundwater mixing zone thickness taken as TACO default
LF-sw = Leaching Factor via TACO equation R14
GWcomp = Groundwater Objective at Compliance Point (Tier 1 GRO)
C(x)/C(source) = Ratio of C(x) at Compliance Point to C(source) calculated via Taco equation R15, see Table 1
GWsource = Groundwater concentration at source, calculated via TACO equation R13
Calc. T2 SRO = Calculated Soil Remediation Objective via TACO equation R12
Csat = Soil Saturation Limit as listed in IAC-742 Appendix A, Table A (NA = A C-sat has not been established for this compound in Appendix A, Table A
Req. T2 SRO = Requested Tier 2 SRO (taken as the smaller of the Calculated Tier 2 SRO and the Saturation Limit)
Max. Observed Conc. = Maximum concentration during remedial investigations

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APPENDIX F
LABORATORY CERTIFICATIONS

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The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a fixed penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI contains a Class 4 felony. Any person or subsequent offense after conviction remains in a Class 3 felony (415 ILCS 5/44.1). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (8 digit): 951401 IEPA Generator # (11 digit): 0311715020

Site Name: Material Service Corporation - Yard 18 (Ogden & Lawndale)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. DB (initial)
2. Chain of custody procedures were followed in the field. DB (initial)
3. Sample integrity was maintained by proper preservation. DB (initial)
4. All samples were properly labeled. DB (initial)

RECEIVED
OCT 2 2 1999
IEPA/BOL

C. Laboratory Representative

I certify that:

1. Proper chain of custody procedures were followed as documented on the chain of custody forms. R (initial)
2. Sample integrity was maintained by proper preservation. R (initial)
3. All samples were properly labeled. R (initial)
4. Quality assurance/quality control procedures were established and carried out. R (initial)

IL 532 2203

5. Sample holding times were not exceeded. AP (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. AP (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative
Name: Daniel Bradfield	Name: Arminta P. Priddy
Title: Senior Project Manager	Title: Laboratory Director
Company: DAI Environmental, Inc.	Company: AEA Laboratories Inc
Address: 5 Revere Drive, Suite 310	Address: 8609 W. Bryn Mawr Ste 201
Northbrook, Illinois 60062	Chicago, IL 60631
Phone: (847) 498-6910	Phone: 773-693-8030
Signature: Daniel G. Bradfield	Signature: Arminta P. Priddy
Date: 6/25/99	Date: 7-19-99

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.18). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document that, maintained or used for the purpose of compliance with Title XVI, commits a Class 4 felony. Any subsequent or intentional offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.18). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Physical Soil Analysis

A. Site Identification

IEMA Incident # (10 digit): 951401 IEPA Generator # (10 digit): 0311715020

Site Name: Material Service Corporation - Yard 18 (Ogden & Lawndale)

Site Address (Street, P.O. Box): 4226 South Lawndale

City: Lyons County: Cook

B. Sample Collector

I certify that:

1. Samples were collected using ASTM procedures. DB (initial)
2. Chain of custody procedures were followed in the field. DB (initial)
3. Sample integrity was maintained by proper preservation. DB (initial)
4. All samples were properly labeled. DB (initial)

RECEIVED
OCT 2 2 1999
IEPA/BOL

C. Laboratory Representative

I certify that:

1. Proper chain of custody procedures were followed as documented on the chain of custody forms. R (initial)
2. Sample integrity was maintained by proper preservation. R (initial)
3. All samples were properly labeled. R (initial)
4. Quality assurance/quality control procedures were established and carried out. R (initial)

5. The test methods specified in the ASTM Standard D 422-63 or or D 1140-54 were used for particle size analysis. — (Initial)

6. The test methods specified in ASTM Standards ~~D 2216-90~~ or ~~D 4643-87~~ were used for soil moisture content. D2974 — AP (Initial)

7. The test methods specified in ASTM Standards D 2487-90 or D 2488-90 were used for soil classification. — (Initial)

8. The test methods specified in ASTM Standards D 5084-90 or D 4525-90 were used for hydraulic conductivity. — (Initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative
Name: Daniel Bradfield	Name: Arminta P. Priddy
Title: Senior Project Manager	Title: Laboratory Director
Company: DAI Environmental, Inc.	Company: ABA Laboratories
Address: 5 Revere Drive, Suite 310	Address: 8609 W. Bryn Mawr, Ste 201
Phone: (847) 498-6910	Phone: 773-693-8030
Signature: Daniel G. Bradfield	Signature: Arminta P. Priddy
Date: 6/15/99	Date: 7-19-99

The Agency is authorized to require this information under Section 4 (a) Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI (Section 4 Class 4 Felony). Any person or individual offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (6 digits): 951401 IEPA Generator # (10 digits): 0311715020

Site Name: Material Service Corporation - Yard 18 (Ogden & Lawndale)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. DB (initial)
2. Chain of custody procedures were followed in the field. DB (initial)
3. Sample integrity was maintained by proper preservation. DB (initial)
4. All samples were properly labeled. DB (initial)

RECEIVED
OCT 2 2 1999
IEPA/BOL

C. Laboratory Representative

I certify that:

1. Proper chain of custody procedures were followed as documented on the chain of custody forms. (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)
4. Quality assurance/quality control procedures were established and carried out. (initial)

5. Sample holding times were not exceeded. (initials)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative
Name: Daniel Bradfield	Name: [illegible]
Title: Senior Project Manager	Title: Proj Manager
Company: DAI Environmental, Inc.	Company: Great Lakes Analytical
Address: 5 Revere Drive, Suite 310	Address: 1380 Busch Parkway
Northbrook, Illinois 60062	Buffalo Grove, IL 60089
Phone: (847) 498-6910	Phone: 847-808-7766
Signature: [illegible]	Signature: [illegible]
Date: 6/29/99	Date: 7-23-99

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APPENDIX G
SOIL BORING AND MONITORING WELL LOGS

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FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-1

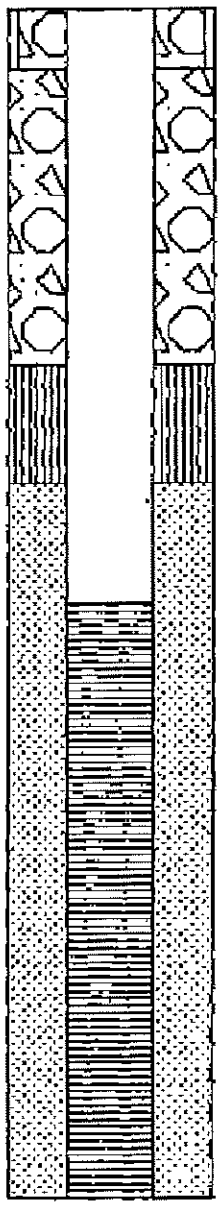
PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6113
TOTAL DEPTH: 10 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION
0.0								ASPHALT
								GRAVEL FILL
-1.0	✱	SS	18	18	G	0		SILTY SAND: Dark gray, dry
-2.0								No sample collected
-3.0								
-4.0								SAND: Light brown fine-medium sand, trace clay
-5.0	✱	SS	18	18	G	0		
-6.0								No sample collected
-7.0								
-8.0								SANDY CLAY: Medium brown, fractured bedrock, wet at 9 feet
-9.0	✱	SS	18	10	G	0		
-10.0								

WELL INSTALLATION



DEPAUL
AND ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS

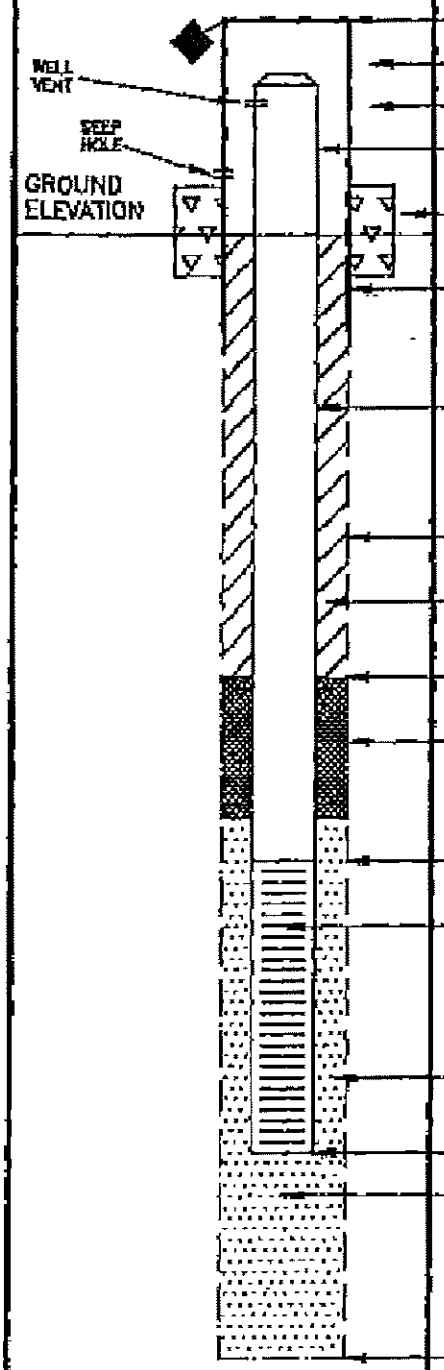
BORING No. SB-1/MW-1

MONITORING WELL SHEET

PROJECT MSC Yard 18
PROJECT No. 6213
ELEVATION
FIELD GEOLOGIST Daniel Bradfield

LOCATION Lyons, IL
BORING SB-1/MW-1
DATE 2/1/99

DRILLER MBS
DRILLING METHOD HSA
DEVELOPMENT METHOD Block & Surge w/ bailer



ELEVATION OF TOP OF SURFACE CASING:
ELEVATION OF TOP OF RISER PIPE:
STICK-UP TOP OF SURFACE CASING:
STICK-UP RISER PIPE: Flush Mounted
TYPE OF SURFACE SEAL:
I.D. OF SURFACE CASING: 10"
TYPE OF SURFACE CASING: 10" Steel
RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: PVC sch40 FJT
BOREHOLE DIAMETER: 4¼"
TYPE OF BACKFILL: Bentonite/Grout
EVEVATION/DEPTH OF SEAL: 3'
TYPE OF SEAL: Bentonite Chips
DEPTH TOP OF SAND PACK: 4'
ELEVATION/DEPTH TOP OF SCREEN: 5'
TYPE OF SCREEN: Stainless Steel
SLOT SIZE x LENGTH 0.10 5-ft (factory wound)
I.D. OF SCREEN 2"
TYPE OF SAND PACK: Silica Sand
ELEVATION/DEPTH BOTTOM OF SCREEN: 10'
ELEVATION/DEPTH BOTTOM OF SAND PACK:
TYPE OF BACKFILL BELOW OBSERVATION WELL:
ELEVATION/DEPTH OF HOLE: 10'

FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-2

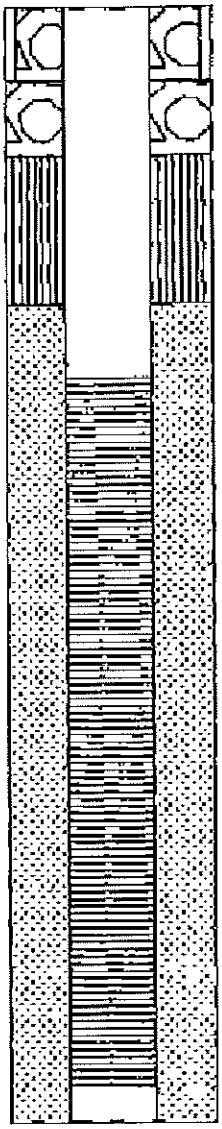
PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 7.5 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION
0.0								GRAVEL FILL
-1.0		SS	18	18	G	0		SANDY CLAY: Medium brown; Trace gravel
-2.0								No sample collected
-3.0								
-4.0								SANDY CLAY: Medium brown
-5.0		SS	18	18	G	0		
-6.0								No sample collected; Auger refusal at 7.5 feet (Bedrock inferred)
-7.0								

WELL INSTALLATION



DEPAUL
AND ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS

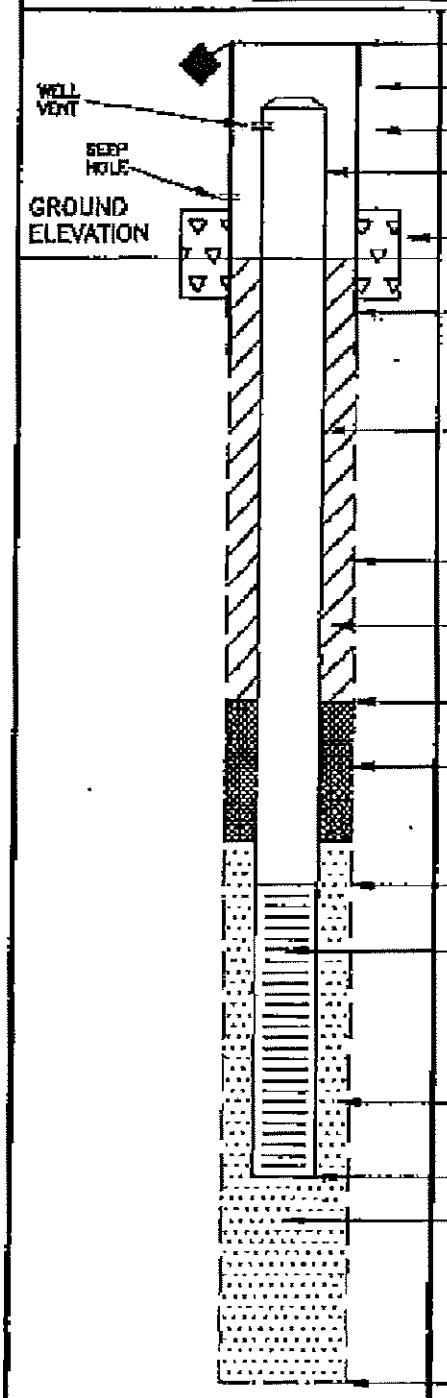
BORING No. SB-2/MW-2

MONITORING WELL SHEET

PROJECT: MSC Yard 18
PROJECT No. 6213
ELEVATION:
FIELD GEOLOGIST: Daniel Bradfield

LOCATION: Lyons, IL
BORING: SB-2/MW-2
DATE: 2/1/99

DRILLER: MES
DRILLING METHOD: HSA
DEVELOPMENT METHOD: Block & Surge w/ bailer



ELEVATION OF TOP OF SURFACE CASING:
ELEVATION OF TOP OF RISER PIPE:
STICK-UP TOP OF SURFACE CASING:
STICK-UP RISER PIPE: Flush Mounted
TYPE OF SURFACE SEAL:
I.D. OF SURFACE CASING: 10"
TYPE OF SURFACE CASING: 10" Steel
RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: PVC sch40 FJT
BOREHOLE DIAMETER: 4½"
TYPE OF BACKFILL: Bentonite/Grout
EVEVATION/DEPTH OF SEAL: 1'
TYPE OF SEAL: Bentonite Chips
DEPTH TOP OF SAND PACK: 2'
ELEVATION/DEPTH TOP OF SCREEN: 2.5'
TYPE OF SCREEN: Stainless Steel
SLOT SIZE x LENGTH: 0.10 5-ft (factory wound)
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: Silica Sand
ELEVATION/DEPTH BOTTOM OF SCREEN: 7.25'
ELEVATION/DEPTH BOTTOM OF SAND PACK: 7.5'
TYPE OF BACKFILL BELOW OBSERVATION WELL: Silica Sand
ELEVATION/DEPTH OF HOLE: 7.5'

FIELD BOREHOLE LOG

SB-3

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 10 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								SANDY CLAY: Light gray, dry	
-1.0		SS	18	18	G	0			
-2.0								No sample collected	
-3.0									
-4.0								SILTY CLAY: Medium gray, trace sand, moist	
-5.0		SS	18	14	F	0			
-6.0								No sample collected	
-7.0									
-8.0								SANDY CLAY: Light gray, wet	
-9.0		SS	18	16	F	0			
-10.0									

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FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-4

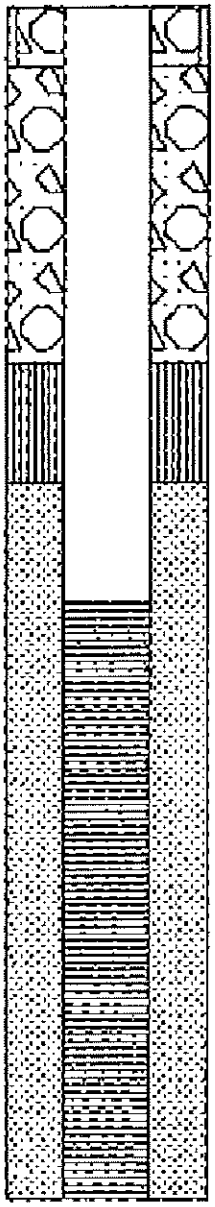
PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 10 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION
0.0								SANDY CLAY: Light gray, dry
-1.0		SS	18	18	G	0		
-2.0								No sample collected
-3.0								
-4.0								CLAYEY SAND: Medium-grained, medium brown clayey sand, moist
-5.0		SS	18	18	G	0		
-6.0								No sample collected
-7.0								
-8.0								SANDY CLAY: Medium gray, moist; Bedrock at 10 feet
-9.0		SS	18	18	G	0		
-10.0								

WELL INSTALLATION



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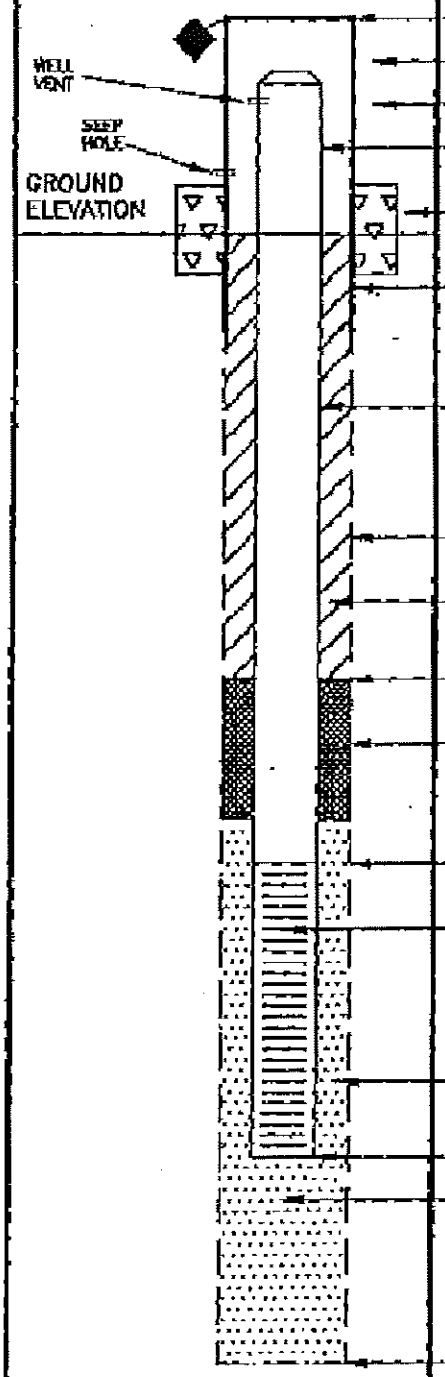
DEPAUL
AND ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS

BORING No. SB-4/MW-3

MONITORING WELL SHEET

PROJECT MSC Yard 18	LOCATION Lyons, IL	DRILLER MBS
PROJECT No. 6213	BORING SB-4/MW-3	DRILLING METHOD HSA
ELEVATION	DATE 2/1/99	DEVELOPMENT METHOD Block & Surge w/ bailer
FIELD GEOLOGIST Daniel Bradfield		



ELEVATION OF TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE: Flush Mounted

TYPE OF SURFACE SEAL:

I.D. OF SURFACE CASING: 10"

TYPE OF SURFACE CASING: 10" Steel

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC sch40 FJT

BOREHOLE DIAMETER: 4¼"

TYPE OF BACKFILL: Bentonite/Grout

EVEVATION/DEPTH OF SEAL: 3'

TYPE OF SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 4'

ELEVATION/DEPTH TOP OF SCREEN: 5'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE x LENGTH 0.10 5-ft (factory wound)

I.D. OF SCREEN 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION/DEPTH BOTTOM OF SCREEN: 10'

ELEVATION/DEPTH BOTTOM OF SAND PACK: 10'

TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION/DEPTH OF HOLE: 10'

FIELD BOREHOLE LOG

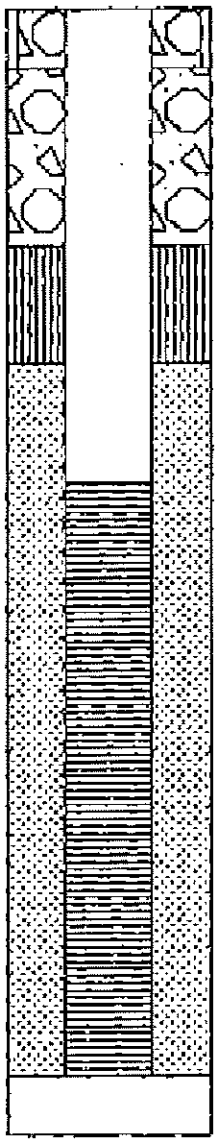
BOREHOLE NUMBER: SB-5

PROJECT NAME: M&C YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 9 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								SURFACE: 6" asphalt, 4" stone	
1.0		SS	18	14	F	0-1		SANDY CLAY: Olive gray	
2.0								No sample collected	
3.0									
4.0								SANDY CLAY: Olive gray - medium brown	
5.0		SS	18	12	P	1-2			
6.0								No sample collected	
7.0									
8.0								Refusal at 9.0 feet (Bedrock inferred)	
9.0		SS	10	0	N/A	N/A			



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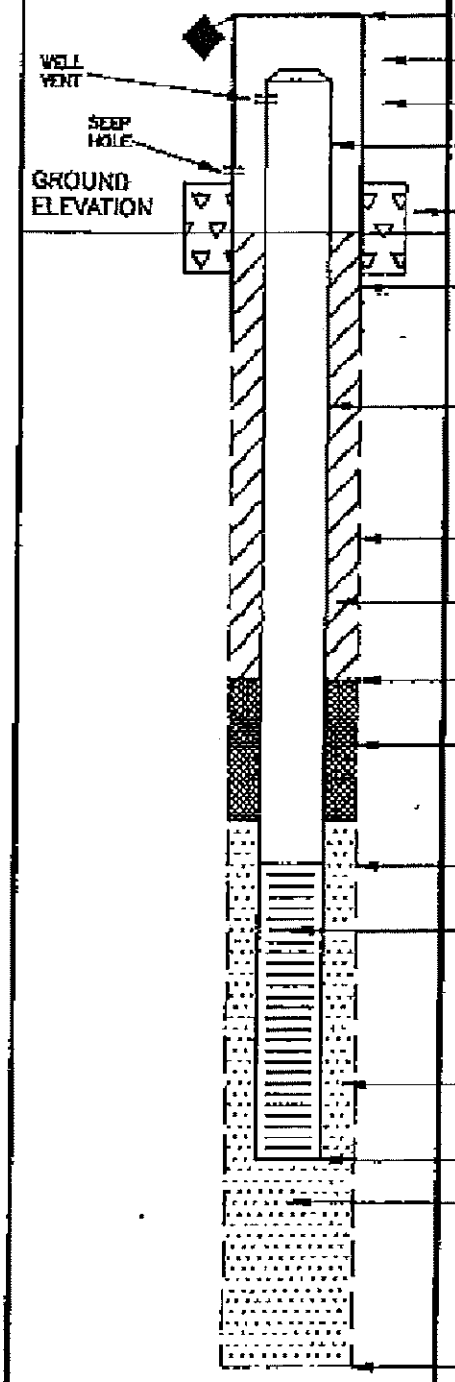
DEPAUL
AND ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS

BORING No. SB-5/MW-4

MONITORING WELL SHEET

PROJECT MSC Yard 18	LOCATION Lyons, IL	DRILLER MES
PROJECT No. 6213	BORING SB-5/MW-4	DRILLING METHOD HSA
ELEVATION	DATE 2/1/99	DEVELOPMENT METHOD Block & Surge w/ bailer
FIELD GEOLOGIST Daniel Bradfield		



ELEVATION OF TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING:

STICK-UP RISER PIPE: Flush Mounted

TYPE OF SURFACE SEAL: Cement-Bentonite grout

I.D. OF SURFACE CASING: 10"

TYPE OF SURFACE CASING: 10" Steel

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC sch40 FJT

BOREHOLE DIAMETER: 4¼"

TYPE OF BACKFILL: Bentonite/Grout

EVEVATION/DEPTH OF SEAL: 2'

TYPE OF SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 3'

ELEVATION/DEPTH TOP OF SCREEN: 4'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE x LENGTH 0.10 5-ft (factory wound)

I.D. OF SCREEN 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION/DEPTH BOTTOM OF SCREEN: 9'

ELEVATION/DEPTH BOTTOM OF SAND PACK: 9'

TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION/DEPTH OF HOLE: 9'

FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-6

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 7.5 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								SANDY CLAY: Dark gray clay with trace sand	
-1.0	X	SS	18	18	G	0			
-2.0								No sample collected	
-3.0									
-4.0								SANDY CLAY: Fine sand, moist	
-5.0	X	SS	18	16	G	0-1			
-6.0								No sample collected, Bedrock at 7.5 feet	
-7.0	X	SS	18	0	P	N/A			

FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-7

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MGS
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 7.25 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0						-		SANDY CLAY: Dark gray clay with trace sand	
-1.0		SS	18	18	G	1-2			
-2.0								No sample collected	
-3.0									
-4.0								SANDY CLAY: Light gray fine sand with clay	
-5.0		SS	18	18	F	1-2			
-6.0								No sample collected; Bedrock at 7.25 feet	
-7.0			NR	NR	N/A	N/A			

FIELD BOREHOLE LOG

BOREHOLE NUMBER: SB-8

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 8 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								SANDY CLAY: Olive grey	
-1.0		SS	18	18	G	1-3			
-2.0								No sample collected	
-3.0									
-4.0								SANDY CLAY: Light gray	
-5.0		SS	18	14	F	1-2			
-6.0								No sample collected	
-7.0								SANDY CLAY: Light gray, wet. Refusal at 8 feet (Bedrock inferred)	
		SS	12	12	F	0			
-8.0									

FIELD BOREHOLE LOG

SB-9

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, IL
DRILLING CO: MES
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED:

PROJECT NUMBER: 6213
TOTAL DEPTH: 10 FEET
SURFACE ELEVATION: FEET MSL
LOGGED BY: DAN BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								SURFACE: Clay, sand, gravel, and cinder fill	
-1.0		SS	18	18	G	21-23			
-2.0								No sample collected	
-3.0									
-4.0								SANDY CLAY: Olive gray	
-5.0		SS	18	18	G	221-250			
-6.0								No sample collected	
-7.0									
-8.0								SANDY CLAY: Olive gray	
-9.0		SS	18	18	G	6-7			
-10.0									

FIELD BOREHOLE LOG

SB-10

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, ILLINOIS
DRILLING CO: DAI ENVIRONMENTAL, INC.
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED: 5/6/99

PROJECT NUMBER: 6213
TOTAL DEPTH: 10
SURFACE ELEVATION: FEET MSL
LOGGED BY: D. BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0									
1.0									
2.0		SS	18	6	P	3.4		SANDY CLAY: Light gray, moist	
3.0									
4.0									
5.0									
6.0		SS	18	12	G	0.2		SANDY CLAY: Light gray, moist	
7.0									
8.0									
9.0		SS	18	12	G	1.1		SANDY CLAY: Light gray, trace gravel; End of boring at 10-ft bgs	
10.0									

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FIELD BOREHOLE LOG

SB-11

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, ILLINOIS
DRILLING CO: DAI ENVIRONMENTAL, INC.
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED: 5/6/99

PROJECT NUMBER: 6213
TOTAL DEPTH: 10
SURFACE ELEVATION: FEET MSL
LOGGED BY: D. BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0									
-1.0									
-2.0		SS	24	12	G	24.6		SANDY CLAY: Medium brown, turns into dark gray clay with odor	
-3.0									
-4.0									
-5.0									
-6.0		SS	24	18	G	32.5		SANDY CLAY: Olive gray, trace gravel, moist	
-7.0									
-8.0								SANDY CLAY: Light gray with some gravel, strong odor	
-9.0		SS	24	18	G	11.2		SANDY CLAY: Olive gray, moist, End of boring at 10 ft bgs	
-10.0									

FIELD BOREHOLE LOG

SB-12

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, ILLINOIS
DRILLING CO: DAI ENVIRONMENTAL, INC.
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED: 5/6/99

PROJECT NUMBER: 6213
TOTAL DEPTH: 10
SURFACE ELEVATION: FEET MSL
LOGGED BY: D. BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0									
1.0									
2.0		SS	24	18	G	10.8		SANDY CLAY: Dark olive gray, moist	
3.0									
4.0									
5.0									
6.0		SS	24	16	G	11.1		SANDY CLAY: Light brown	
7.0									
8.0									
9.0		SS	24	18	G	10.9		SILTY CLAY: Light gray, some gravel and sand, moist; End of boring at 10-ft bgs	
10.0									

FIELD BOREHOLE LOG

SB-13

PROJECT NAME:	MSC YARD 18	PROJECT NUMBER:	6213
LOCATION:	LYONS, ILLINOIS	TOTAL DEPTH:	10
DRILLING CO:	DAI ENVIRONMENTAL, INC.	SURFACE ELEVATION:	FEET MSL
DRILLING METHOD:	HOLLOW STEM AUGER	LOGGED BY:	D. BRADFIELD
DATE DRILLED:	5/6/99		DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0									
-1.0									
-2.0		SS	24	18	G	8.2		FINE SAND: Light brown, dry	
-3.0									
-4.0									
-5.0									
-6.0		SS	24	18	G	9.6		SANDY CLAY: Light brown, moist	
-7.0									
-8.0									
-9.0		SS	24	18	G	4.2		FINE SAND: Light brown, very fine, moist	
-10.0									

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FIELD BOREHOLE LOG

SB-14

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, ILLINOIS
DRILLING CO: DAI ENVIRONMENTAL, INC.
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED: 8/6/99

PROJECT NUMBER: 6213
TOTAL DEPTH: 10
SURFACE ELEVATION: FEET MSL
LOGGED BY: D. BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0								TOPSOIL: Dark gray	
1.0								SILTY CLAY: Light brown	
2.0		SS	24	18	G	9.1			
3.0									
4.0									
5.0								SANDY CLAY: Light brown	
6.0		SS	24	14	G	12.3		SAND: Light brown, medium size gravel, sand	
7.0									
8.0								FINE SAND: Light brown, sand size: fine-very fine, wet at 9-ft bgs; End of boring at 10-ft bgs	
9.0		SS	24	16	G	6.1			
10.0									

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FIELD BOREHOLE LOG

SB-15

PROJECT NAME: MSC YARD 18
LOCATION: LYONS, ILLINOIS
DRILLING CO: DAI ENVIRONMENTAL, INC.
DRILLING METHOD: HOLLOW STEM AUGER
DATE DRILLED: 5/6/99

PROJECT NUMBER: 6213
TOTAL DEPTH: 10
SURFACE ELEVATION: FEET MSL
LOGGED BY: D. BRADFIELD

DAI ENVIRONMENTAL, INC.

DEPTH	SAMPLES	SAMPLING METHOD	INCHES DRIVEN	RECOVERY (in.)	SAMPLE CONDITION	FIELD VOC (ppm)	GRAPHIC LOG	DESCRIPTION	WELL INSTALLATION
0.0									
-1.0								CLAY: Dark gray, organic	
-2.0		SS	24	18	G	2.8		SAND: Light brown, medium grain, dry	
-3.0									
-4.0									
-5.0								SANDY CLAY: Light brown, moist, root fragments	
-6.0		SS	24	14	G	6.9			
-7.0									
-8.0								FINE SAND: Light brown, sand size: fine-very fine, wet at 9-ft bgs. End of boring at 10-ft bgs	
-9.0		SS	24	18	G	3.5			
-10.0									

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APPENDIX H
SLUG TEST RESULTS

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mw-4

MW-1							
depth to water-static (ft)=		6.4					
depth to bottom of well (ft)=		9					
time (min)	depth to water (ft)	h/ho	LN (h/ho)				
0.00	6.31	1.000	0	SLOPE=	-0.04897		
1.00	6.16	0.835	-0.18013	To=	21.28992		
2.00	6.12	0.791	-0.23419				
3.00	6.07	0.736	-0.30617	r (ft)=	0.0833		
4.00	6.04	0.703	-0.35198	R (ft)=	0.177		
5.00	6.00	0.659	-0.41651	To (min)=	21.28992	linear regression	
6.00	5.96	0.637	-0.45042	Le (ft)=	3.145		
7.00	5.96	0.637	-0.45042				
8.00	5.97	0.626	-0.46781	K (ft/min)=	0.000149		
9.00	5.94	0.593	-0.52188	K (cm/s)=	7.57E-05		
10.00	5.93	0.582	-0.54057				

mw-1

MW-4							
depth to water-static (ft)=		8.25					
depth to bottom of well (ft)=		10					
time (min)	depth to water (ft)	h/ho	LN (h/ho)				
0.08	8.68	1.000	0	SLOPE=	-0.03106		
1.00	8.50	0.826	-0.07898	To=	32.20025		
2.00	8.39	0.881	-0.12709				
3.00	8.34	0.880	-0.15073	r (ft)=	0.0833		
4.00	8.28	0.835	-0.17986	R (ft)=	0.177		
5.00	8.24	0.819	-0.19976	To (min)=	32.20025	linear regression	
6.00	8.18	0.794	-0.23037	Lo (ft)=	2.535		
7.00	8.13	0.774	-0.25662				
8.00	8.07	0.749	-0.28905	K (ft/min)=	0.000113		
9.00	8.02	0.726	-0.31881	K (cm/s)=	5.75E-05		
10.00	7.95	0.712	-0.33977				

APPENDIX I
PROFESSIONAL ENGINEER CERTIFICATION

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The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Professional Engineer Certification

A. Site Identification

IEMA Incident # (6 digit): 951401 IEPA Generator # (10 digit): 0311715020

Site Name: Material Service Corporation-Yard 18 (Ogden & Lawndale)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook

B. Certification

The release from the underground storage tank system(s) identified by the above referenced incident number at the above referneced site has been remediated in accordance with 35 Ill. Adm. Code, Part ☐ 731 or ☐ 732 and other applicable rules and regulations. The remedial activities are described in the Corrective Action Completion Report dated July 29, 1999. The remediation has achieved the objectives set forth by the Agency in:

35 Ill. Adm. Code Part 742	X
Site Specific Cleanup Objectives approved by the Agency in the letter dated _____	
Other (specify) _____	

RECEIVED
OCT 2 2 1999
IEPA/BOL

I certify under penalty of law that the Corrective Action Completion Report, supporting documents and all attachments were prepared under my direction or supervision or were reviewed by me. To the best of my knowledge and belief, the attached Corrective Action Completion Report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of the fine and imprisonment for knowing violations.

Professional Engineer

Name: Richard J. Vamos

Firm: DAI Environmental, Inc.

Address: One Northbrook Place
5 Revere Drive, Suite 310
Northbrook, Illinois 60062

Phone: (847) 498-6910

Ill. Registration No.: 0062-049139

License Expiration Date: 11/30/99

Signature: [signature] 7/30/99

P.E. Seal

RICHARD J. VAMOS
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

IL 532 2289

APPENDIX J
PLAT OF SURVEY AND LEGAL DESCRIPTION

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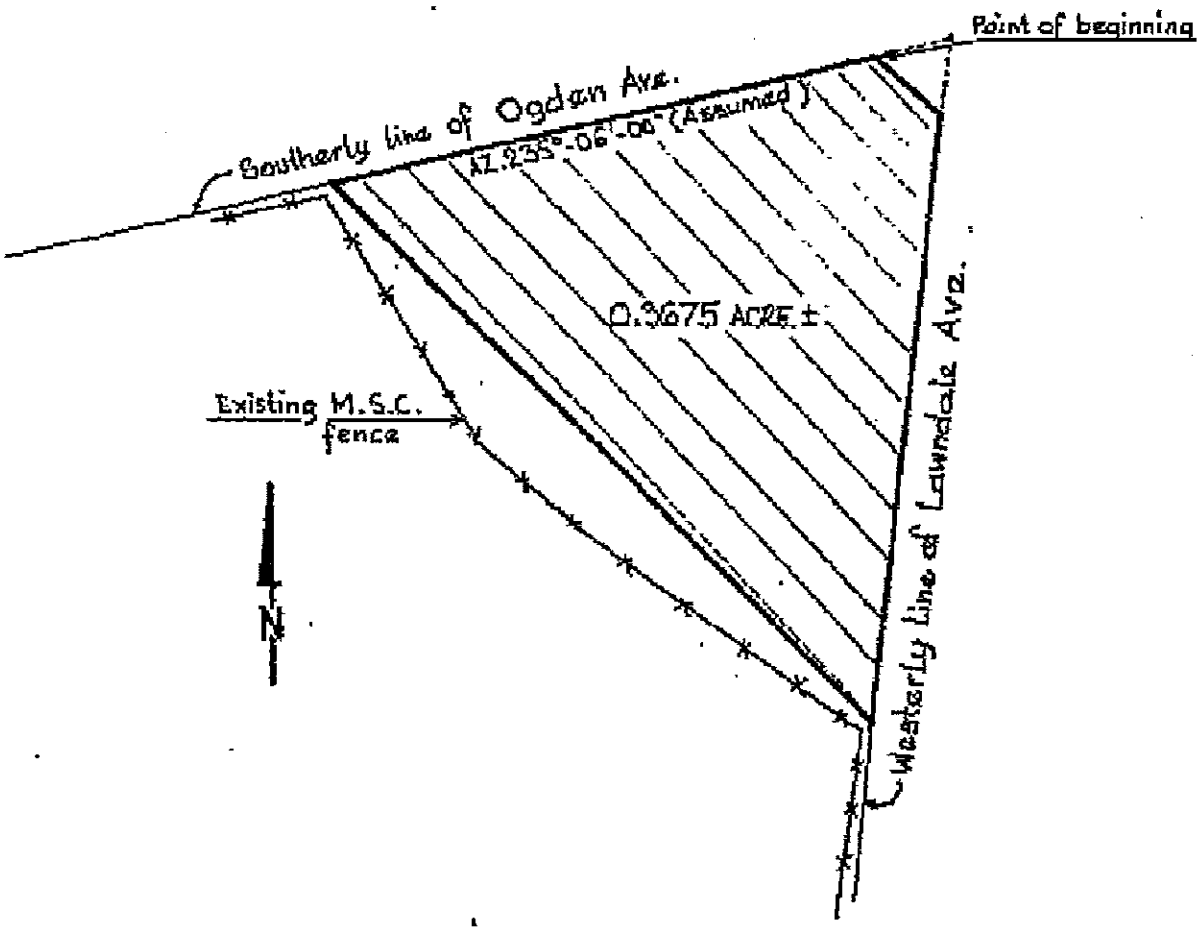
Date: December 8,1997
Prepared by: L.Musiol

LEGAL DESCRIPTION
of portion M.S.C. parcel code #139

That part of NE quarter of Section 2, Township 38N, Range 12E of the Third Principal Meridian, in Cook County, Illinois bounded and described as follows:
Commencing at the point of intersection of the westerly line of Lawndale Ave. with the southerly line of Ogden Ave., and going westerly with assumed azimuth 235 06'00" for a distance of 20.00 feet to a point of beginning;
thence continue with said azimuth 235 06'00" along westerly line of Lawndale Ave. for a distance of 158.44 feet; thence southeasterly with azimuth 110 34'08" for a distance of 220.56 feet; thence northwesterly with azimuth 341 29'59" for a distance of 169.17 feet; thence northwesterly with azimuth 288 22'01" for a dist. of 23.99 feet to a point of beginning, containing 0.3675 acre, more or less.



APPENDIX G

DAI CACR AMENDMENT

0311715020-COOK
Material Service Corp.
Hunt Tech

ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 847.579.6900
Fax 847.579.6953

Polo Park Business Center
27834 N. Irma Lee Circle
Lake Forest, Illinois 60045-5130

February 19, 2004

Mr. Michael Heaton
Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 N. Grand Avenue, East
P.O. Box 19276
Springfield, IL 62794-9276

Re: ***Corrective Action Completion Report Amendment***
LPC # 0311715020 – Cook County
MSC - Yard 18 Lawndale Ogden
4226 South Lawndale Avenue
Lyons, IL 60534-1199
Incident # 951401
LUST Technical File

RECEIVED
FEB 20 2004
IEPA/BOL

Dear Mr. Heaton,

Please find enclosed two copies (one bound, one unbound) of the *Corrective Action Completion Report* (CACR) Amendment for Material Service Corp. - Yard 18 Lawndale Ogden, Incident # 951401. This Incident Number corresponds to the release from 5 gasoline Underground Storage Tanks (USTs) ranging in size from 1,000-gallons to 6,000-gallons. The USTs were excavated and removed from the property at the corner of Lawndale Ave. and Ogden Ave. June 27-28, 1995. One 8000-gallon diesel fuel UST was also removed at this time, which is located at the other end of the quarry and is referred to as the Haffner tank. This diesel fuel tank is included under the 951401 Incident.

This CACR Amendment details only the completion of Corrective Actions at the Lawndale Ogden portion of the Incident Number. Although all parties recognize that a No Further Remediation (NFR) Letter cannot be issued by the IEPA for Incident Number 951401 because of the remaining issues at the Haffner UST, this report is being submitted to seek recognition of completion of the Corrective Action activities at the Ogden/Lawndale Site. Material Service wishes to receive written correspondence from Illinois EPA stating that all work is complete on this property and at such time as Corrective Actions are completed at Haffner, a NFR Letter will be obtainable.

RELEASABLE
APR 26 2004
REVIEWER MD

If you have any questions, please contact me at (847) 573-8900 extension 118.

Sincerely,
DAI Environmental, Inc.

Christopher Cailles

Christopher Cailles, E.I.T.
Project Engineer

Enclosures

cc: Mary Anne Hunter - Material Service Corp (w/enclosure)

DAI ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 847.679.6900
Fax 847.679.6963

Polo Park Business Center
27834 N. Irma Lee Circle
Lake Forest, Illinois 60045-5130

CORRECTIVE ACTION COMPLETION REPORT
LPC #0311715020 - COOK COUNTY
MATERIAL SERVICE CORP - YARD 18
LAWNDALE AND OGDEN AVENUES
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS
LUST INCIDENT #951401

February 4, 2004

DAI Project Number: 6213

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IEPA/BOL

Prepared For:
Material Service Corporation
4226 Lawndale Avenue
Lyons, Illinois 60534

Prepared By:
DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, Illinois 60045

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APR 26 2004
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TABLE OF CONTENTS

FIGURES ii
TABLES ii
APPENDICES ii
IEPA LEAKING UNDERGROUND STORAGE TANK PROGRAM FORMS iii

1.0 INTRODUCTION 1

2.0 REPORT HISTORY 2

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT 4
C. COMPLETION INFORMATION 4
C.1. Chronological Narrative 4
C.2. How Correction Activities Remediated Threats 5
C.3. Discussion of Cleanup Objective Determination 6
C.3.1 Soil Ingestion Pathway 6
C.3.2 Soil Inhalation Pathway 6
C.3.3 Groundwater Ingestion Pathway 7
C.4. Media Sampling and Analytical Procedures 7
C.4.1. Soil Boring Procedures 7
C.4.2. Soil Classification Procedures 8
C.4.3. Headspace Vapor Analysis 8
C.4.4. Analysis of Soil Samples 9
C.4.5. Static Water Level Measurements 10
C.4.6. Rising Head Hydraulic Conductivity Testing 11
C.5. Analytical Results and Cleanup Objectives in Tabular Format 11
C.6. Laboratory Reports 11
C.7. Soil Boring Logs 11
C.8. Monitoring Well Boring Logs 12
C.9. Laboratory Certification 12
C.10. Professional Engineer Certification 12
C.11. Site Maps 12
C.12. Owner/Operatory Summary 12
C.13. Photographs Documenting Corrective Action Activities 12

4.0 SUMMARY 13

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LIST OF FIGURES

Site Location Map ..... Figure 1
Site Area Map ..... Figure 1a
Potentiometric Surface (April 27, 1999) ..... Figure 2
Engineered Barrier Locations ..... Figure 3
Soil Boring and Monitoring Well Locations ..... Figure 4
Locations of Exceedances of Most Stringent Applicable SROs ..... Figure 5
Extent of Contamination and Area Requiring an Engineered Barrier ..... Figure 6
R-26 Parameters and Groundwater Flow Direction ..... Figure A-1

LIST OF TABLES

Summary of Prior Chemical Analysis of Soil Samples for BTEX and PNAs ..... Table 1
Summary of Chemical Analysis of Soil Samples for BTEX and PNAs ..... Table 2
Summary of Soil Sample Analysis Results for Miscellaneous Parameters ..... Table 3
Summary of Groundwater Sampling Analysis Results ..... Table 4
Summary of Tier 1 SRO Exceedances in Vadose Zone Soils ..... Table 5
Tier 1 SRO Exceedances for the Ingestion and Inhalation Exposure Pathways ..... Table 6
Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils
and Soil Saturation Limit ..... Table 7
Tier 2 SROs and Maximum Observed Contaminant Concentrations ..... Table 8
Distance Required for COC's to Attenuate vs Distance Across Ogden Avenue ..... Table 9
Summary of Estimated Hydraulic Conductivities ..... Table 10
Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils
and Soil Saturation Limit ..... Table C-1

LIST OF APPENDICES

REVIESED FATE AND TRANSPORT MODELING ..... APPENDIX A
HIGHWAY AUTHORITY AGREEMENT ..... APPENDIX B
PATHWAY EXCLUSION DEMONSTRATION ..... APPENDIX C
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION ..... APPENDIX D
GROUNDWATER INGESTION
PHOTOGRAPHS ..... APPENDIX E
PROFESSIONAL ENGINEER CERTIFICATION ..... APPENDIX F
OWNER/OPERATOR SUMMARY PAGE ..... APPENDIX G
PLAT OF SURVEY AND LEGAL DESCRIPTION ..... APPENDIX H

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Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Corrective Action Completion Report

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FEB 20 2004
IEPA/BOL

A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale/Ogden)

Site Address (not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

B. Site Information

1. Is this an amended report? Yes ✓ No ____

2. Has a Corrective Action Plan been approved? Yes ✓ No ____
   Date of approval letter: July 25, 2002

3. This completion report is being submitted pursuant to:

   a. 35 Ill. Adm. Code 731.166 ____

   b. 35 Ill. Adm. Code 732.300(b) ____

   c. 35 Ill. Adm. Code 732.409(a) ✓

   d. 415 ILCS 5/57-57.17 (includes Public Act 92-0554) ____

4. Method of remediation chosen:

   a. Soil excavation and institutional controls

   b. Groundwater Institutional controls

5. Quantity of contaminated media remediated/recovered:

   a. Soil 330 yds.^{3}

   b. Groundwater 0 gals.

   c. Free Product 0 gals.

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C. Completion Information

Provide the following:

1. A chronological narrative of corrective action activities;
2. An explanation of how the corrective action activities remediated the release;
3. A discussion of how the remediation objectives were determined;
4. Media sampling and analytical procedures to verify completion of remediation;
5. The analytical results and remediation objectives in tabular format;
6. Laboratory reports;
7. Soil boring logs;
8. Monitoring well logs;
9. Laboratory Certification;
10. Applicable Professional Engineer Certification;
11. Site maps to scale and oriented north showing the:

    a. Final soil sample locations demonstrating completion of remediation;
    b. Groundwater monitoring well locations;
    c. Groundwater recovery/discharge points;
    d. Plume of contamination as defined by laboratory analyses; and
    e. Area remediated.

12. Owner/Operator Summary; and
13. Photographs documenting corrective action activities.

D. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner

Company/Name: Material Service Corp

Owner Contact: Gary O'Toole

Address: 4226 South Lawndale Ave

City, State, ZIP: Lyons, IL 60534-1199

Phone: 312-443-7104

Signature: Gary W. O'Toole

Date: 2-11-04

This page can be completed online.

Operator (if different than UST Owner)

Name: Same as Owner

Title:

Address:

City, State, ZIP:

Phone:

Signature:

Date:

Consultant

Firm: DA/ Environmental, Inc.

Contact: F. Thomas DePaul

Title: President

Address: 27834 N. Irma Lee Circle

City, State, ZIP: Lake Forest, IL 60045

Phone: 847-573-8900

Signature:

Date:

CORRECTIVE ACTION COMPLETION REPORT
LPC #0311715020 - COOK COUNTY
MATERIAL SERVICE CORP - YARD 18
LAWNDALE AND OGDEN AVENUES
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS
LUST INCIDENT #951401

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1.0 INTRODUCTION

This document is an attachment to the *Corrective Action Completion Report* (CACR) prepared by DAI Environmental, Inc. (DAI) and submitted to the Illinois Environmental Protection Agency (IEPA) on behalf of Material Service Corp. (MSC) - Yard 18 Ogden/Lawndale, regarding Illinois Emergency Management Agency (IEMA) Incident Number 951401. The site is located at the intersection of Lawndale Avenue and Odgen Avenue, but is addressed to MSC at 4226 South Lawndale Ave in Lyons, Illinois (See Figure 1 for a Site Location Map and Figure 1a for an Area Map). This attachment provides the information required under Section C of the CACR forms. All other information is included directly on the above-referenced report forms.

This document has been prepared to assist in the review of the CACR by following the organizational format of the IEPA Leaking Underground Storage Tank (LUST) Program forms. Each section of this document is headed by one of the question statements in the forms, set in ***Bold Italics***, and keyed to its respective section. Please note that this report has been prepared to discuss the Yard 18 Ogden/Lawndale portion of Incident Number 951401 only. The "Haffner" tank, which has the same Incident Number but is situated on the opposite side of the rock quarry will be addressed in a separate report.

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2.0 REPORT HISTORY

On June 27, 1995, five (5) underground storage tanks (USTs) were removed from the Ogden and Lawndale location in the presence of a representative from the Lyons Fire Department. During the removal activities at the Ogden and Lawndale location (Site), it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. IEMA was immediately notified of the suspected release, and Incident Number 951401 was assigned. A Corrective Action Completion Report, dated March 10, 1998, summarizing the UST removal activities and the results of a March 1995 Phase II investigation was submitted to the IEPA. Based upon the information contained in that report, a "No Further Remediation" (NFR) Letter was requested from IEPA. In a letter dated April 9, 1998, IEPA disapproved the request on the basis that the extent of soil and groundwater contamination had not been fully investigated/delineated. A Site Classification Work Plan and Budget, dated August 3, 1998, was submitted for agency approval to comply with IEPA's request for further investigation. On December 2, 1998, IEPA approved this work plan pending four (4) modifications.

On July 29, 1999, DAI Environmental, Inc. (DAI) submitted a *Site Classification/Corrective Action Completion Report* (CACR) to IEPA. On January 27, 2000, IEPA issued a letter disapproving the CACR for six (6) specific reasons.

Item 1: *The extent of benzene contaminated soils in excess of Tier I remediation objectives was not defined beyond the property boundary north of SB-9. The extent must be defined...*

Item 2: *The report indicated only gasoline is the material that was released at the Ogden and Lawndale site. Therefore, the only indicator contaminants required to be addressed are benzene, ethylbenzene, toluene, and xylenes ("BTEX")...*

Item 3: *As a result of Item 2 above, the areas to be covered by an engineered barrier need to be re-evaluated. It appears the area in the vicinity of SB-6 located along the eastern edge of the property adjacent to Lawndale Avenue will not require an engineered barrier. Additionally...*

Item 4: *The Illinois EPA disapproves of the input parameters used to perform Equation R26. Specifically, there was no demonstration made to determine how far the contamination plume will*

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extend onto off-site properties...Since no information was provided for the groundwater mixing zone thickness, the default value of 200 centimeters should have been used for "S_d"...

Item 5: *The Illinois EPA will determine if the groundwater ordinance for the Village of Lyons will satisfy the requirements necessary to be used as an acceptable institutional control....*

Item 6: *The Illinois EPA has not received a High Priority Corrective Action Plan and associated budget. This information may be submitted separately or concurrently with the High Priority Corrective Action Completion Report.*

In response to these comments, DAI wrote and submitted a High Priority CAP and Budget to IEPA. The CAP, dated March 7, 2002, was approved in an IEPA response letter dated July 25, 2002. Note that with respect to Item 2 above (addressed in the CAP), BTEX and PNAs are contaminants of concern due to the use of the USTS for gasoline and diesel fuel. In the July 25, 2002 CAP approval letter, IEPA included five (5) comments. These five (5) comments are restated below with DAI's individual responses to each of them, if applicable:

Item 1: *A revised Corrective Action Completion Report...should contain the following information: (a) the revised R26 calculations demonstrating that contaminated groundwater does not extend across Ogden or Lawndale Avenues (as referenced in the subject submittal); (b) Groundwater flow diagrams; (c) Highway Authority Agreements with the appropriate entity for Ogden and Lawndale Avenues; and (d) a demonstration that an asphalt cover (the proposed engineered barrier) has been placed over the areas depicted in Figure 9 of the July 29, 1999 report.*

> The revised R26 calculation is provided in Appendix A. As shown in Figure 2, the potentiometric surface map, the groundwater flow direction at the Site is to the west. Therefore, the groundwater contamination and soil contamination leaching to groundwater will not extend past Lawndale Ave (located east of the Site). Additionally, the revised R26 equations demonstrate that the groundwater lead concentration of 0.016 mg/L will attenuate to 0.0006 mg/L by the west side of Ogden Ave, significantly less than the Tier 1 Class I Groundwater Remediation Objective (GRO) of 0.0075 mg/L. The R26 and R12 calculations demonstrate that benzene, ethylbenzene, and PNA soil contamination leaching to groundwater will also attenuate long before crossing Ogden Ave. DAI has included in Appendix B a copy of the Highway Authority Agreement with The Illinois Department of Transportation (IDOT) allowing for the groundwater (as well as soil) contamination under Ogden and Lawndale Avenues to remain in place. Finally, Figure 3 shows the location of the engineered barrier on site and Appendix E provides photographic documentation of the barrier in-place.

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Item 2: *No additional soil or groundwater samples should be collected at this time.*

No additional soil or groundwater samples were collected.

Item 3: *Illinois EPA is satisfied that soil contamination does not migrate across Ogden and Lawndale Avenue, though a Highway Authority Agreement developed in accordance with 35 IAC 742.1020 with the highway authority (authorities) over these roadways should still be developed for Illinois EPA review and approval.*

As stated above, DAI has included in Appendix B a copy of the Highway Authority Agreement with IDOT allowing for the groundwater (as well as soil) contamination under Ogden and Lawndale Avenues to remain in place.

Item 4: *The groundwater ordinance enacted by the Village of Lyons has been approved by Illinois EPA for use as an institutional control to address the groundwater ingestion exposure route.*

MSC will be relying upon the IEPA approved groundwater use prohibition ordinance enacted by the Village of Lyons.

Item 5: *It does not appear as though the lead is a contaminant of concern. In addition, it does not appear as though the lead detected at location SB-14 is the result of a release from the underground storage tank.*

DAI and MSC agree that lead is not a contaminant of concern.

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT

C. COMPLETION INFORMATION

C.1. Chronological Narrative

On June 27-28, 1995, five (5) USTs were removed from the property located at the corner of Lawndale Avenue and Ogden Avenue in Lyons, Illinois, in the presence of a representative from the Lyons Fire Department. During the removal activities, it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. The IEMA was immediately notified of the suspected release, and the IEMA Incident Number 951401 was assigned. Specific details regarding the UST and associated piping removal activities and soil excavation and disposal were submitted to the agency in the 45-Day Report, dated March 25, 1996. In addition to the five (5)

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USTs removed at the corner, one (1) UST, which is part of the 951401 Incident Number was removed from the opposite side of the rock quarry. This tank is referred to as the "Haffner" UST. This CACR addresses activities at the Ogden/Lawndale portion only.

During a Phase II Site Assessment, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11), on March 14, 1995. Pursuant to the IEPA approved work plan, fifteen (15) soil borings (SB-1 through SB-15) were drilled under the supervision of DAI. On February 1, 1999, soil samples were collected from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected from borings SB-10 through SB-15. Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. Both soil and groundwater samples were submitted to an independent analytical laboratory for chemical and physical analysis.

In the CACR denial letter dated January 27, 2000, the IEPA noted that the extent of benzene contamination had not been properly delineated. To address this request, DAI petitioned IDOT (the governmental agency responsible for maintenance of the adjacent right-of-ways at Ogden and Lawndale Avenues) for permission to install soil borings in the street. On July 2, 2001, after receiving permission from IDOT, DAI installed four (4) soil borings, two (2) soil borings each in Lawndale Ave (B-16 and B-17) and Ogden Ave (B-18 and B-19). The four (4) soil borings were installed until bedrock was encountered at depths ranging from 9 to 10.5-ft below ground surface (bgs). See Figure 4 for the locations of all of the soil borings and monitoring wells.

C.2. How Corrective Activities Remediated Threats

As part of the UST removal activities on June 27, 1995, 330-yd^3 of soil and backfill exhibiting visual and olfactory evidence of petroleum contamination were excavated and disposed of off-site. Further details regarding these activities were previously submitted in the 45-Day Report.

On May 18, 1999, the Village of Lyons passed Ordinance Number 5-18-99-3, "AN ORDINANCE AMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH

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PROHIBITS WELLS FOR POTABLE WATER SUPPLY." In the CAP approval letter dated July 25, 2002, Item 4 states that the groundwater use prohibition ordinance (GUPO) is approved by IEPA. The GUPO has been approved for the entire Village of Lyons without requiring a memorandum of understanding (MOU). This ordinance will be implemented as an institutional control to eliminate the groundwater ingestion exposure pathway. A groundwater ingestion pathway exclusion demonstration is included in Appendix C.

Benzene and PNAs were observed at concentrations in excess of the Tier 1 Soil Remediation Objectives (SROs) for the soil inhalation and ingestion exposure routes at various locations across the site. To ensure that these observed exceedances do not adversely impact human health, a portion of the site was asphalt-paved to eliminate these exposure pathways. The two (2) areas requiring an engineered barrier were covered with asphalt blacktop on August 27, 2003. The Village of Lyons intends to purchase the property from MSC to create a memorial. Proper paperwork and notifications will be made to ensure that prior to future intrusive construction activities, the property owner will ensure that construction workers are notified of the potential health hazards and that the proper industrial hygiene practices are observed. An engineered barrier compliance demonstration is provided in Appendix D and photographs of the engineered barrier are provided in Appendix E.

C.3. Discussion of Cleanup Objective Determination

C.3.1. Soil Ingestion Pathway: The SROs for the soil ingestion pathway were determined from 35 IAC Section 742 Appendix B, Table B: *Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties*. Exceedances were addressed by the installation of an engineered barrier of asphalt pavement.

C.3.2. Soil Inhalation Pathway: The SROs for the soil inhalation pathway were determined from 35 IAC Section 742 Appendix B, Table B: *Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties*. Exceedances were addressed by the installation of an engineered barrier of asphalt pavement.

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C.3.3. Groundwater Ingestion Pathway: The GROs for the groundwater ingestion pathway were initially taken from 35 IAC Section 742 Appendix B, Table E: *Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Pathway.* The SROs for the soil component of groundwater ingestion were first compared to Tier 1 values provided in 35 IAC 742 Appendix B, Table B. Observed exceedances were then compared to Tier 2 concentrations calculated from R12 and R26 modeling equations. See Appendix A for fate and transport modeling. Tables 8 lists the Tier 2 GRO values used and Table 9 gives the modeled distance to attenuation. The groundwater ingestion pathway is eliminated because the Village of Lyons has in place an ordinance prohibiting the use of groundwater as a potable water supply. Based upon the ordinance, the point of human exposure is moved to the village property line. See Appendix C for a formal demonstration for exclusion of the groundwater ingestion pathway.

C.4. Media Sampling and Analytical Procedures

The sampling and analytical procedures of DAI's investigation are detailed in the following sections.

C.4.1. Soil Boring Procedures

During a Phase II Site Investigation, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11) on March 14, 1995.

Fifteen (15) soil borings (SB-1 through SB-15) were drilled by Midwest Engineering Services of Orland Park, Illinois, using a truck-mounted drilling rig equipped with 4¼-inch internal diameter hollow stem augers. These soil borings were installed for the purposes of delineating the extent of BTEX and PNA contamination. On February 1, 1999, soil samples were collected at 0 to 2-ft bgs, 4 to 6-ft bgs, and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected at 1 to 3-ft bgs and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-10 through SB-15. The four (4) soil borings placed in the adjacent roads (B-16 through B-19) were drilled by Geocon Test Drilling, Inc. of Crescent City, Illinois, using a truck-mounted drilling rig equipped with 4¼-inch internal diameter hollow stem augers. These soil borings were installed for the purposes of delineating the extent of

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BTEX and PNA contamination. On July 2, 2001, two (2) soil samples were collected from two (2) discrete 2-ft sampling intervals from each of the soil borings B16-B19. Generally, the sample intervals were 3 to 5-ft bgs and 5 to 7-ft bgs which correspond to the unsaturated vadose zone soils and the capillary fringe, respectively. The sampling spoon was decontaminated between each sampling event by scrubbing with a non-phosphate detergent followed by rinsing with tap water. All drilling equipment, and the sampling spoons, were decontaminated between soil borings using a high pressure steam cleaner. All drilling and sampling activities were conducted under the supervision of DAI.

Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. The monitoring wells were installed to depths between 7.5-ft and 10-ft bgs and were constructed of 2-inch diameter schedule 40 polyvinyl chloride (PVC) flush-threaded riser with a 5-ft section of 0.010-inch factory slotted PVC screen. The filter pack, consisting of an artificially introduced sand pack, was extended to 1-ft above the top of the screen. A layer of bentonite, at least 1-ft thick, was used to seal each well, and the remainder of the annular space was grouted with a mixture of cement and bentonite. Locking steel flush-mounted vaults were installed to secure and protect each well. All groundwater monitoring wells were installed by MES under the supervision of DAI.

C.4.2. Soil Classification Procedures

Soil samples were examined for overburden classification as well as for visual evidence of contamination. Soil type, consistency, and the thickness and depth of the units were used to develop soil boring logs and to define the site stratigraphy. The Unified Soil Classification System was used to classify the soil type. Copies of the soil boring logs developed by DAI were provided in Appendix G of the SCCR/CACR and Appendix A of the CAP.

C.4.3. Headspace Vapor Analysis

Headspace vapor measurements were taken in the field to estimate the VOC content of soil samples using a Photovac MicroTip® photoionization detector (PID). The PID was calibrated with a

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100-ppmv/v isobutylene-in-air commercial grade gas standard. The headspace samples were prepared by filling a clean 8-ounce jar approximately half full with soil collected from the sample interval. The jar was then covered with aluminum foil, sealed with the lid and allowed to equilibrate at ambient temperature and out of direct sunlight for at least 15-minutes. The sample headspace was screened for VOCs by inserting the PID probe through the aluminum foil approximately 1-inch into the sample jar.

C.4.4. Analysis of Soil Samples

The soil samples from the Phase II Site Investigation were submitted for laboratory analysis of BTEX via USEPA SW-846 Method 8020 and PNAs via USEPA SW-846 Method 8310. Table 1 in the Tables Section summarizes the Phase II sampling results. All laboratory reports were submitted in previous reports to IEPA.

The soil samples collected from SB-1 through SB-9 were submitted for chemical analysis of VOCs, PNAs, and TCLP Lead via USEPA Methods SW8260B/5035, SW8310, and SW1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of VOCs were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035. Samples were also collected from these borings for the analysis of the landfill parameters Flash Point, Paint Filter, and pH via ASTM Method D492, USEPA Method 9095, and USEPA Method 9040/9041, respectively. Additionally, samples were collected for the analysis of the physical parameters Moisture Content, Ash Content, and Organic Matter Content via ASTM Method D2974 A&C. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory.

The soil samples collected from SB-10 through SB-15 were submitted for chemical analysis of BTEX, PNAs, Total Lead, and TCLP Lead via USEPA Methods SW8021B/5035, SW8310, SW6010B, and 1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of BTEX were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035. Samples were stored on ice immediately after

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collection pending transport to an independent analytical laboratory. Table 2 summarizes the BTEX and PNA results, while Table 3 summarizes the lead and soil characteristics. Both tables are provided in the Tables Section.

The soil samples collected from B-16 through B-19 were submitted for analysis of BTEX and PNAs via SW-846 USEPA Methods 8260B and 8270C, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of BTEX were field preserved pursuant to SW-846 USEPA Method 5035. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory. The results of the final round of sampling are available in Table 2 in the Tables Section.

C.4.5. Static Water Level Measurements

Static water level measurements were collected from MW-1 and MW-4. MW-2 failed to produce water and MW-3 has periodically contained water following substantial rainfalls. All water levels were measured using an electronic water level indicator capable of detecting water depth with an accuracy of ±0.01-ft. The elevation of the top of the well casing was surveyed and the water level data was referenced to an assumed on site datum elevation of 100.00-ft. On April 27, 1999, static water levels were measured in MW-1, MW-3, and MW-4. The elevations of the groundwater in each well was calculated using the surveyed datum elevations and the depth to groundwater measurements. The static water level at MW-1 was 5.40-ft bgs, 9.81-ft bgs at MW-3 and 6.25-ft bgs at MW-4. The potentiometric surface generated for the uppermost water-bearing unit using this data is presented in Figure 3. As can be seen from this figure the groundwater flow direction is west-southwesterly under a hydraulic gradient of 0.022-ft/ft.

All field equipment used to collect water level data was decontaminated prior to and between measurements to eliminate the potential for cross-contamination. Decontamination protocol consisted of an Alconox® soap and water wash and a triple distilled water rinse.

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C.4.6. Rising Head Hydraulic Conductivity Testing

To determine the hydraulic conductivity of the saturated soils, rising head slug tests were conducted on the monitoring wells containing water on February 3, 1999 (MW-1 and MW-4). The slug testing was conducted by removing a "slug" of water from the well and recording the water level changes that result from the instantaneous withdrawal of the slug. The rate of recovery observed in the well is a function of the hydraulic properties of the aquifer, including the hydraulic conductivity which was calculated using the appropriate well-flow equations. Because a slug insertion method forces groundwater to be displaced above the water table and into the unsaturated filter pack of the well and the formation itself and because the overlying material may have different hydraulic properties than the water-bearing zone, it was recommended that the slug tests be conducted by removing water from the wells (i.e. rising head tests). The slug test data was analyzed using Hvorslev's Method, and the results are summarized in Table 10. The highest hydraulic conductivity calculated was 6.5-cm/day. The slug test calculation data was presented in Appendix H of the SCCR/CACR dated July 29, 1999.

C.5. Analytical Results and Cleanup Objectives in Tabular Format

The updated summaries of analytical results compared to applicable SROs and GROs are included in the Tables Section of this report.

C.6. Laboratory Reports

Copies of the analytical laboratory reports were provided in Appendix A and Appendix B of the SCCR/CACR and the CAP, respectively.

C.7. Soil Boring Logs

Copies of the soil boring logs were developed by DAI were provided in Appendix G of the SCCR/CACR and Appendix A of the CAP.

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C.8. Monitoring Logs

Monitoring well logs developed during DAI's investigations were provided in Appendix G of the SCCR/CACR.

C.9. Laboratory Certification

The laboratory certifications for the chemical and physical analysis of soil and groundwater samples were provided in Appendix F of the SCCR/CACR.

C.10. Professional Engineer Certification

The Professional Engineer Certification of the contents of this report is provided in Appendix F.

C.11. Site Maps

Figure 6 is a site map showing the soil sampling and monitoring well locations, extent of contamination above the Tier 1 SROs and GROs, and the location of the engineered barrier.

C.12. Owner/Operator Summary

The property summary page is provided in Appendix G.

C.13. Photographs Documenting Corrective Action Activities

Photographs of the UST removal and soil excavation and disposal were submitted with the 45-Day Report. Photographs of the engineered barrier are included in Appendix E.

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4.0 SUMMARY

On June 28, 1995, five (5) USTs located at the corner of Ogden and Lawndale Avenues were determined to have had a release. Incident Number 951401 was assigned to the release. Several stages of subsurface investigations were performed between 1999 and 2001 to delineate the extent of soil and groundwater contamination. The groundwater ingestion exposure route has been eliminated by the Village of Lyons Ordinance No. 5-18-99-3. Tables 8 and 9 are the results of TACO R12 and R26 modeling which demonstrate that groundwater contamination and residual soil contamination migrating from soil to groundwater will have attenuated to levels below the Tier 1 GROs before encountering the closest downgradient point of human exposure, which is the Village of Lyons municipal boundary. In addition, remaining soil contamination above the Tier 1 SROs for the soil inhalation and ingestion exposure pathways, based upon an industrial/commercial property classification, is covered by an engineered barrier of blacktop asphalt. Based upon the information provided in this report, the Lawndale/Ogden portion of Incident Number 951401 is eligible to received a letter of No Further Remediation.

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FIGURES

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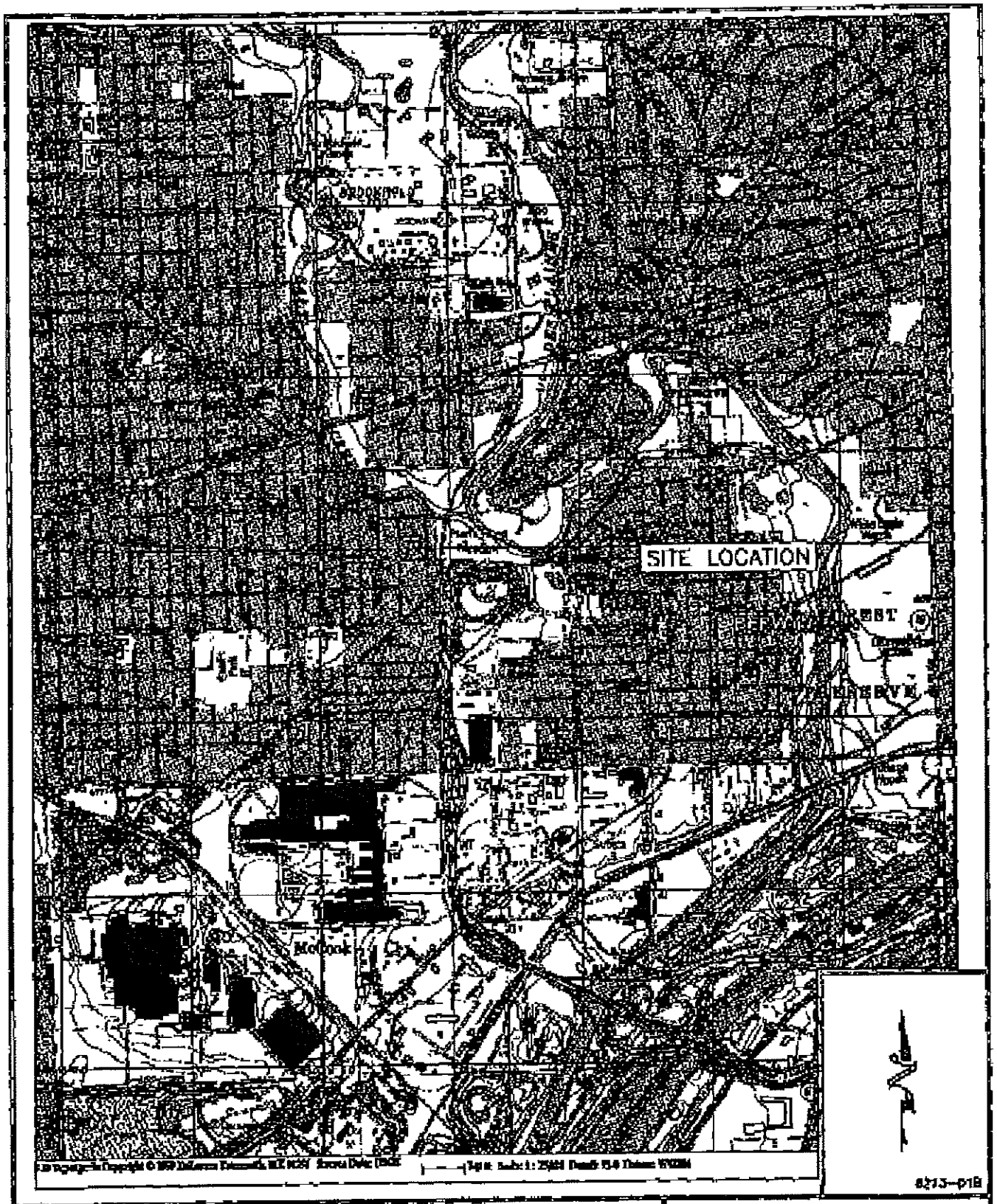
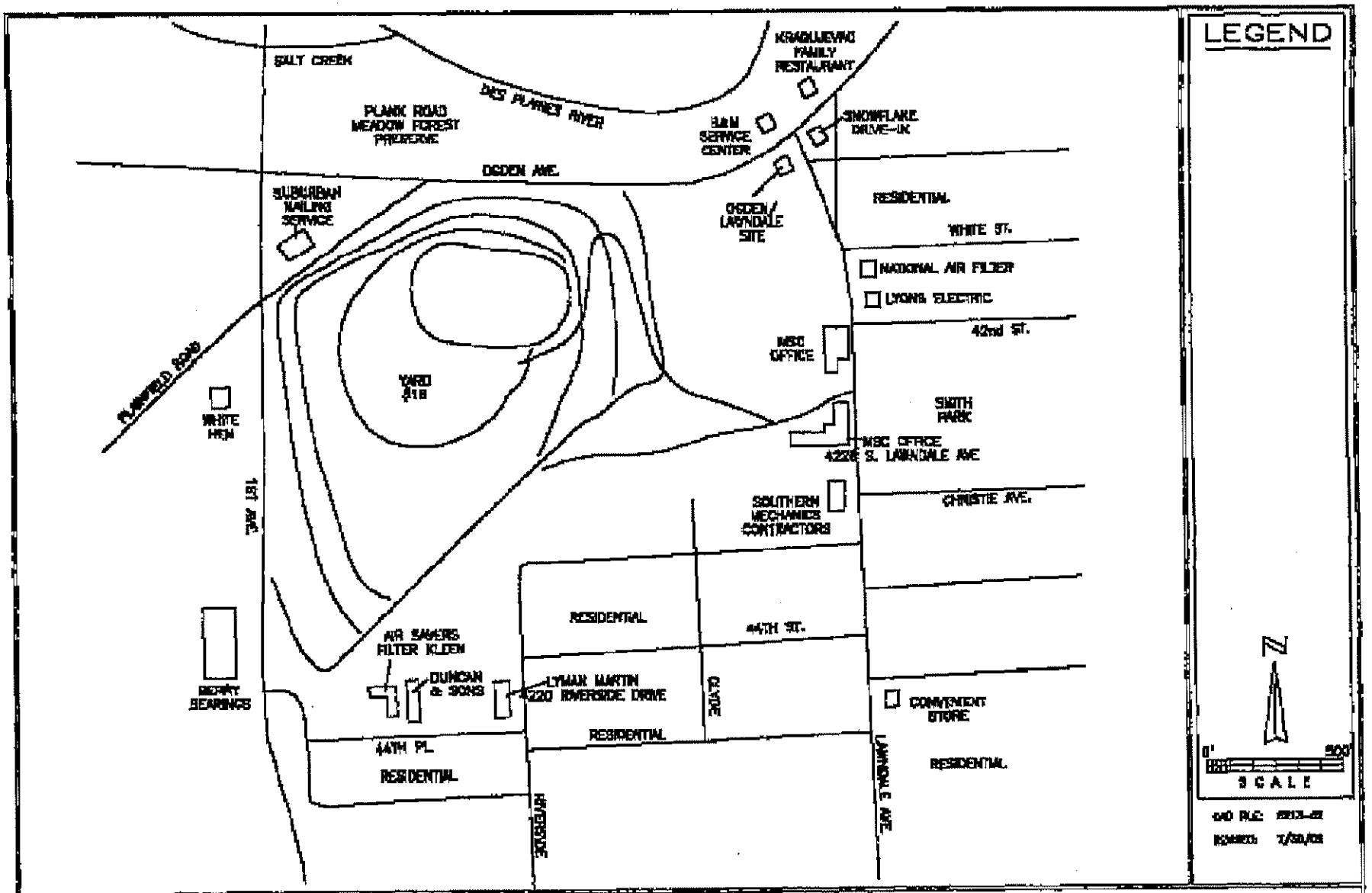


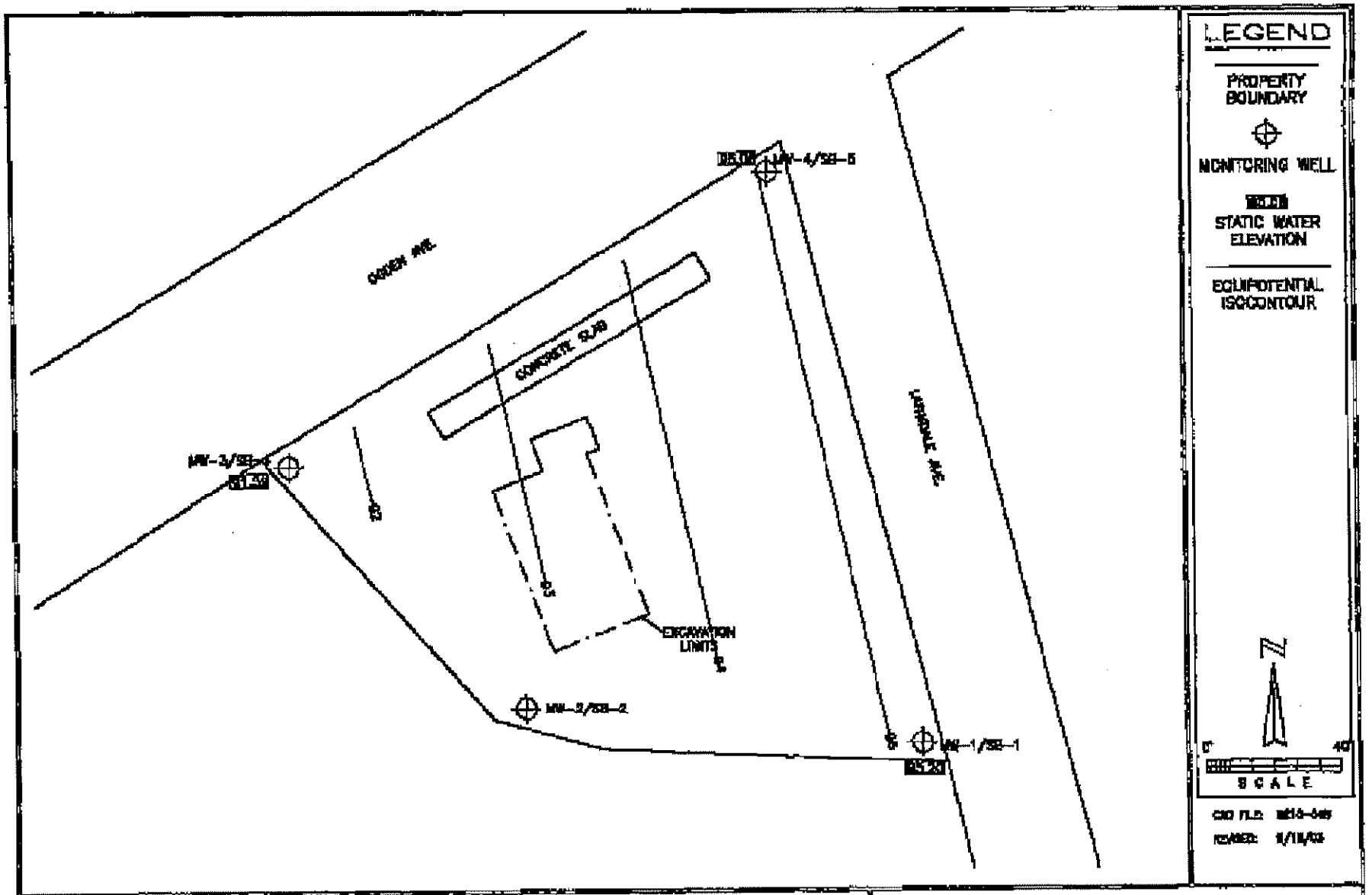
EN DAI AL	MSC – YARD 18 4226 SOUTH LAWNDALE AVENUE LYONS, ILLINOIS	FIGURE 1 SITE LOCATION MAP



ENVIRONMENTAL DAI

MATERIAL SERVICE CORPORATION
4226 SOUTH LAWNDALE AVENUE
LAWNDALE OGDEN
LYONS, ILLINOIS

FIGURE 1A
AREA MAP



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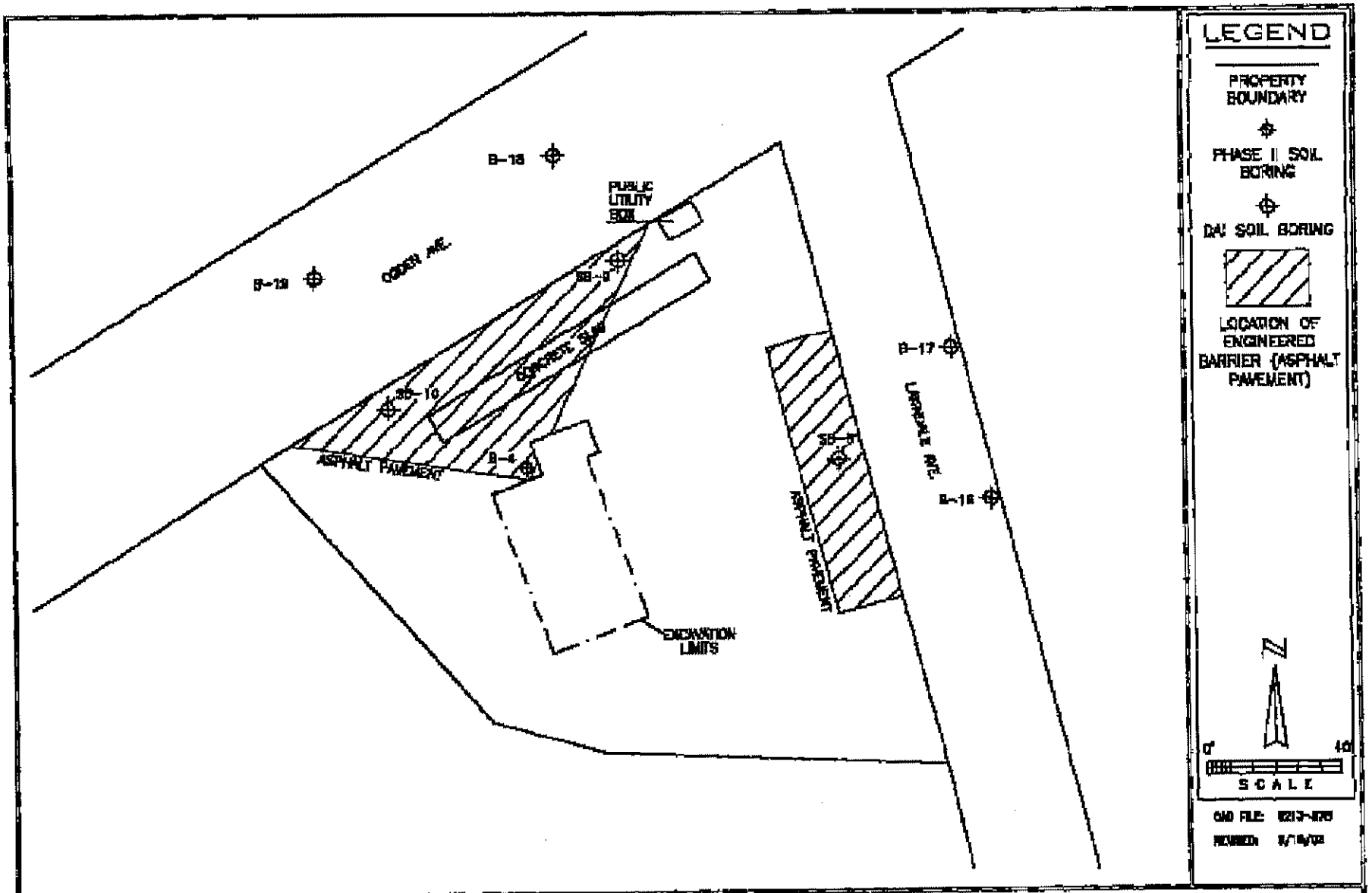
MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 2
POTENTIOMETRIC SURFACE
(APRIL 27, 1999)



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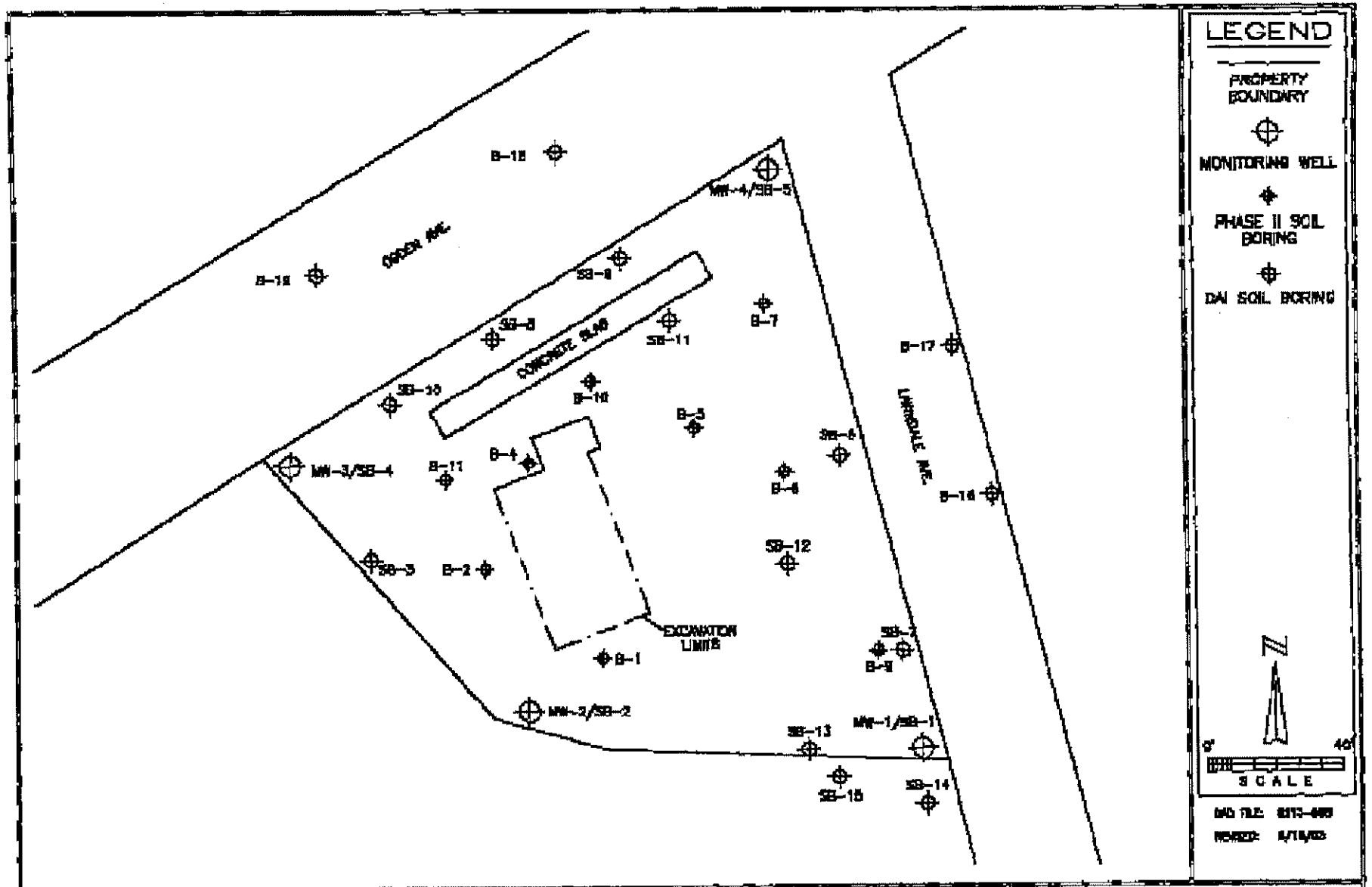
MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

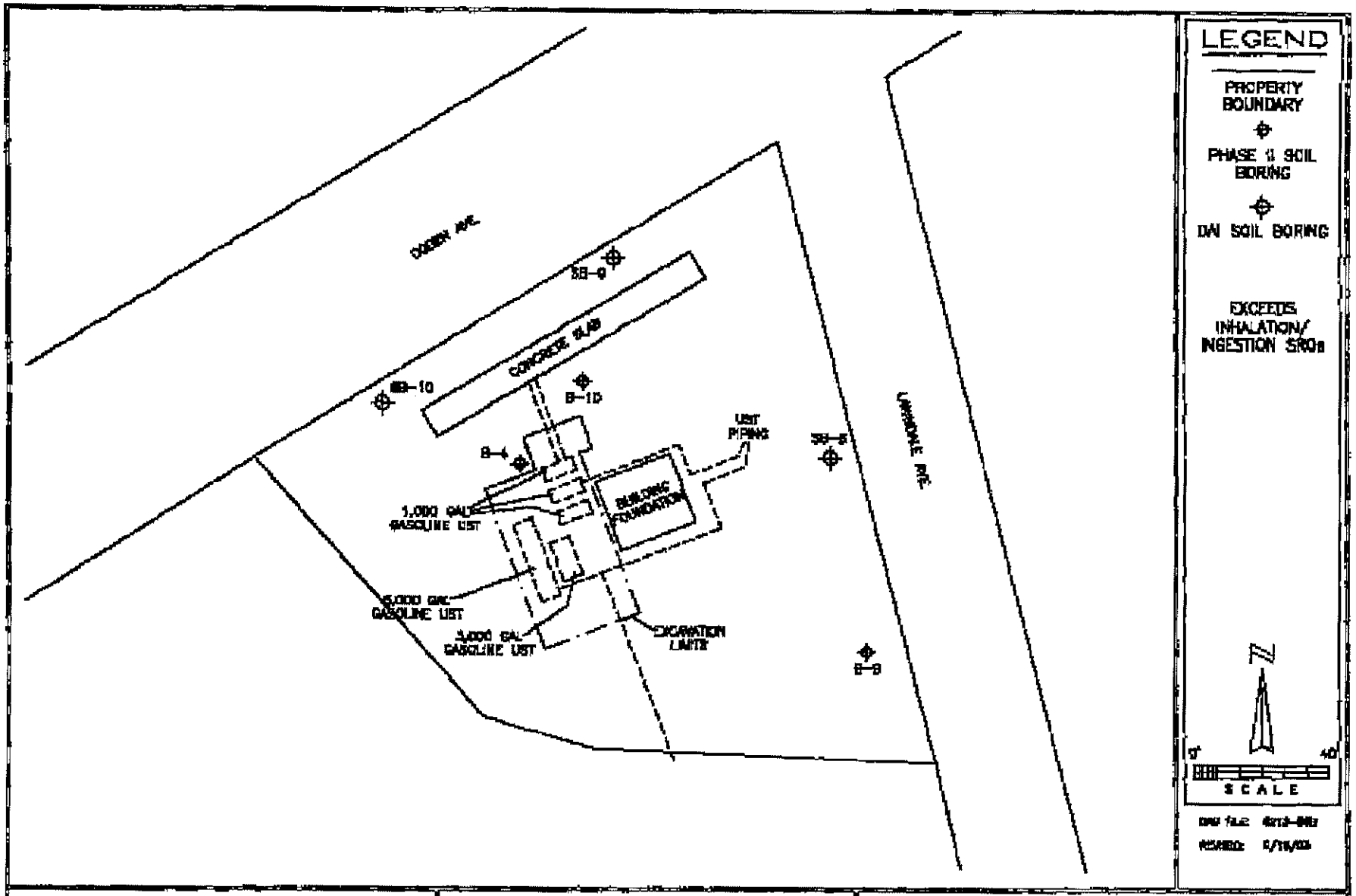
FIGURE 3
ENGINEERED BARRIER LOCATIONS



DAI ENVIRONMENTAL

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 4
SOIL BORING AND
MONITORING WELL LOCATIONS



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MSC YARD 18
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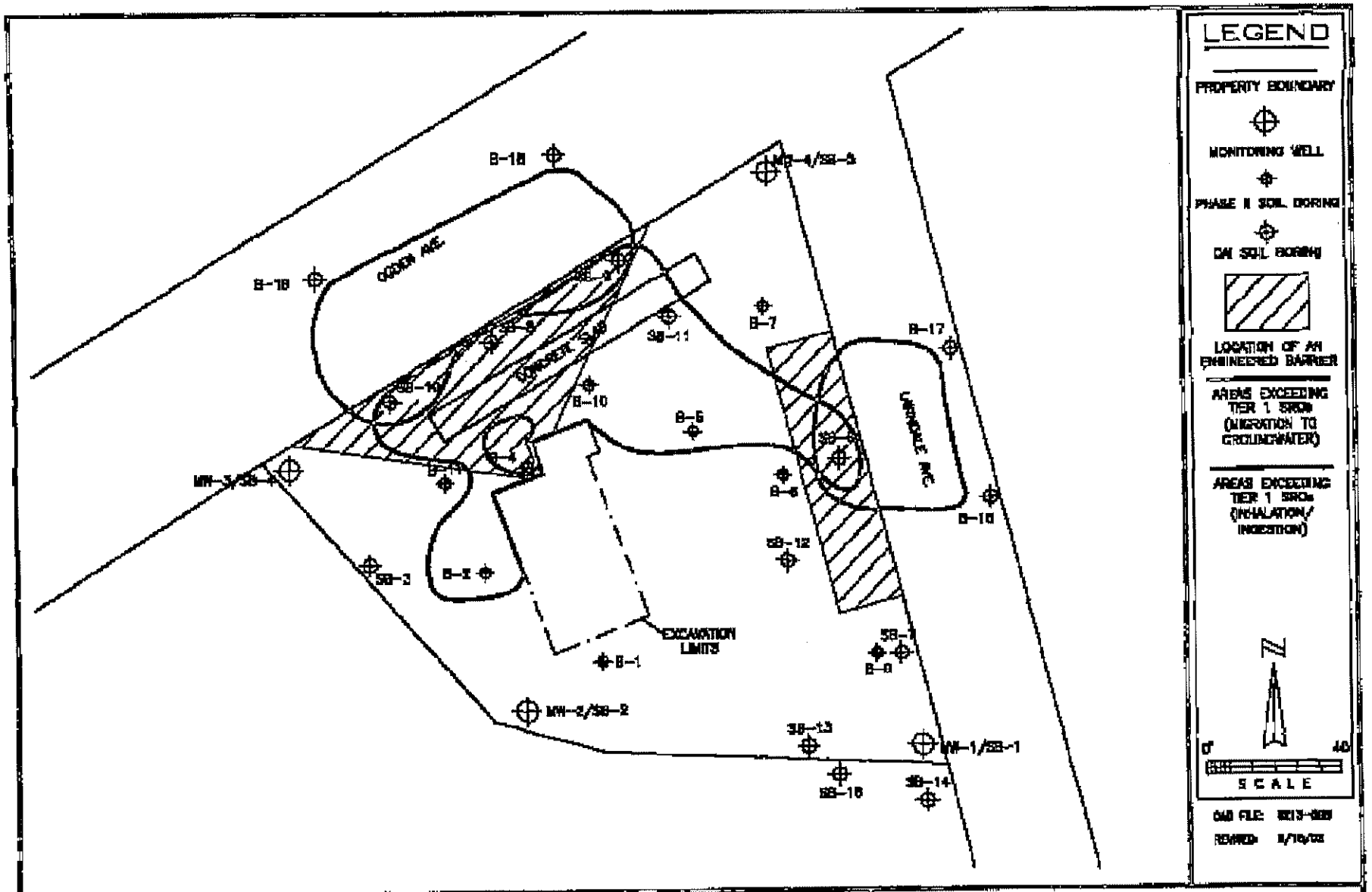
LYONS, ILLINOIS

FIGURE 5
LOCATIONS OF EXCEEDANCES OF
MOST STRINGENT APPLICABLE SROS



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MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 6
EXTENT OF CONTAMINATION AND
AREA REQUIRING AN ENGINEERED BARRIER

TABLES

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Table 1. Summary of Prior Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)									Tier 1 SRO[1]
	B-1 (4-4.5)	B-2 (8.5-9.5)	B-4 (6-6.5)	B-5B (7.5-9.0)	B-6 (6-6.4)	B-7 (5.3-6.5)	B-9 (4.5-5.2)	B-10 (6.7-7.4)	B-11 (6.1-7.0)	
Acenaphthene	<0.660	1.130	0.980	2.200	<0.660	<0.660	<0.660	<0.660	<0.660	570
Acenaphthylene	<0.660	2.840	2.450	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	NL
Anthracene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	12,000
Benzo(a)anthracene	0.0302	<0.00871	<0.00871	<0.00871	0.015	<0.00871	0.213	<0.00871	<0.00871	2
Benzo(a)pyrene	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	0.434	<0.0154	<0.0154	0.8
Benzo(b)fluoranthene	0.0747	0.0381	0.0421	<0.0121	0.0947	<0.0121	0.618	0.0507	<0.0121	5
Benzo(ghi)perylene	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	0.479	<0.0509	<0.0509	NL
Benzo(k)fluoranthene	0.0156	<0.0114	<0.0114	<0.0114	0.0527	<0.0114	0.596	<0.0114	<0.0114	49
Chrysene	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.570	<0.100	<0.100	160
Dibenzo(a,h)anthracene	0.0375	<0.0201	0.0370	<0.0201	0.0955	<0.0201	1.598	<0.0201	<0.0201	0.8
Fluoranthene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	4,300
Fluorene	<0.140	0.544	<0.140	0.244	<0.140	<0.140	0.226	<0.140	<0.140	560
Indeno(1,2,3-cd)pyrene	<0.0288	<0.0288	<0.0288	<0.0288	0.0926	<0.0288	0.491	<0.0288	<0.0288	8.1
Naphthalene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	1.8
Phenanthrene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	NL
Pyrene	0.274	<0.180	<0.180	<0.180	<0.180	<0.180	1.780	<0.180	<0.180	4,200
Benzene	<0.002	1.300	1.540	<0.200	<0.002	<0.002	<0.002	0.0463	<0.002	0.03[1]
Toluene	0.0047	0.938	3.370	<0.200	<0.002	<0.002	<0.002	<0.002	<0.002	12[1]
Ethylbenzene	0.00218	1.650	3.920	15.100	<0.002	<0.002	0.00518	<0.002	<0.002	13[1]
Xylenes (total)	0.00836	4.120	18.370	37.600	<0.0061	<0.006	0.02352	<0.00892	<0.006	150[1]

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8020 and 8310, respectively

Table 2. Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	[illegible] (0-2)	[illegible] (4-6)	[illegible] (8-10)	[illegible] (0-2)	[illegible] (4-6)	[illegible] (0-2)	[illegible] (4-6)	[illegible] (8-10)	
Acenaphthene	<0.053	<0.047	<0.062	<0.048	<0.048	<0.047	<0.050	<0.063	570
Acenaphthylene	<0.0790	<0.0707	<0.0929	<0.0711	<0.0711	<0.0699	<0.0748	<0.0939	NL
Anthracene	<0.0412	<0.0368	0.356	<0.0370	<0.0370	<0.0364	<0.0389	<0.0489	12,000
Benzo(a)anthracene	0.0821	0.0418	1.47	<0.0030	<0.0030	<0.0029	<0.0031	<0.0039	2
Benzo(a)pyrene	0.143	0.0938	1.62	<0.005	<0.005	<0.004	<0.005	<0.006	0.8
Benzo(b)fluoranthene	0.159	0.0899	1.99	<0.0041	<0.0041	<0.0040	<0.0043	<0.0054	5
Benzo(ghi)perylene	0.179	0.129	1.07	<0.0305	<0.0305	<0.0300	<0.0321	<0.0403	NL
Benzo(k)fluoranthene	0.132	0.0589	1.24	<0.0039	<0.0039	<0.0038	<0.0041	<0.0051	49
Chrysene	0.0758	0.0395	1.04	<0.003	<0.003	<0.003	<0.004	<0.004	160
Dibenzo(a,h)anthracene	0.247	0.188	1.95	<0.007	<0.007	<0.007	<0.007	<0.008	0.8
Fluoranthene	0.112	0.0734	2.62	<0.0313	<0.0313	<0.0308	<0.0330	<0.0414	4,300
Fluorene	<0.0693	<0.0620	<0.0815	<0.0623	<0.0623	<0.0613	<0.0656	<0.0823	560
Indeno(1,2,3-cd)pyrene	0.962	0.642	1.13	<0.0098	<0.0098	<0.0096	<0.0103	<0.0129	8
Naphthalene	<0.032	<0.028	<0.037	<0.028	<0.028	<0.028	<0.030	<0.037	1.8
Phenanthrene	<0.0376	<0.0338	0.693	<0.0339	<0.0339	<0.0334	<0.0357	<0.0448	NL
Pyrene	0.158	0.0791	2.99	<0.0608	<0.0608	<0.0594	<0.0640	<0.0804	4,200
Benzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	0.03
Toluene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	12
Ethylbenzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	13
Xylenes (total)	<0.0126	0.094	<0.0148	<0.0114	0.0527	<0.0112	<0.0119	<0.0150	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Contaminant	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	SB4-1 (0-2)	SB4-3 (4-5)	SB4-5 (8-10)	SB5-1 (0-2)	SB5-2 (4-6)	SB5-3 (8-10)	SB6-1 (0-2)	SB6-2 (4-6)	
Acenaphthene	<0.052	<0.048	<0.049	<0.050	<0.050	<0.049	<0.047	<0.051	570
Acenaphthylene	<0.0823	<0.0719	<0.0730	<0.0751	<0.0744	<0.0736	<0.0697	<0.0759	NL
Anthracene	<0.0481	<0.0374	<0.0380	<0.0391	<0.0388	<0.0384	1.74	2.24	12,000
Benzo(a)anthracene	<0.0028	<0.0030	<0.0030	<0.0031	<0.0031	<0.0031	3.56	4.80	2
Benzo(a)pyrene	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	2.26	2.71	0.8
Benzo(b)fluoranthene	<0.0053	<0.0041	<0.0042	<0.0043	<0.0043	<0.0042	2.80	3.25	5
Benzo(ghi)perylene	<0.0397	<0.0309	<0.0314	<0.0323	<0.0320	<0.0316	1.25	1.84	NL
Benzo(k)fluoranthene	<0.0050	<0.0039	<0.0040	<0.0041	<0.0040	<0.0040	1.72	2.16	49
Chrysene	<0.004	<0.003	<0.003	<0.004	<0.004	<0.004	2.46	3.18	160
Dibenzo(a,h)anthracene	<0.009	<0.007	<0.007	<0.007	<0.007	<0.007	1.79	2.74	0.8
Fluoranthene	<0.0407	<0.0317	<0.0322	<0.0331	<0.0328	<0.0325	8.80	12.0	4,300
Fluorene	<0.0810	<0.0630	<0.0640	<0.0658	<0.0653	<0.0646	<0.0611	<0.0665	560
Indeno(1,2,3-cd)pyrene	<0.0127	<0.0099	<0.0100	<0.0103	<0.0102	<0.0101	12.58	15.9	8
Naphthalene	<0.037	<0.029	<0.029	<0.030	<0.030	<0.029	<0.028	<0.030	1.8
Phenanthrene	<0.0441	<0.0343	<0.0348	<0.0359	<0.0356	<0.0352	4.58	6.17	NL
Pyrene	<0.0791	<0.0615	<0.0625	<0.0643	<0.0637	<0.0631	8.21	11.1	4,200
Benzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	0.03
Toluene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	12
Ethylbenzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	13
Xylenes (total)	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - Indicates an exceedance of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID-Sample Depth Interval in Feet								Tier 1 SRO[1]
	SB5-1 (0-2)	SB5-2 (4-6)	SB8-1 (0-2)	SB8-2 (4-6)	SB8-3 (8-10)	SB9-1 (0-2)	SB9-2 (4-6)	SB9-3 (8-10)	
Acenaphthene	<0.054	<0.048	<0.047	<0.051	<0.051	0.158	0.646	<0.058	570
Acenaphthylene	<0.0403	<0.0720	<0.0703	<0.0767	<0.0760	0.281	0.632	<0.0748	NL
Anthracene	0.0449	<0.0375	<0.0366	0.0874	0.205	<0.0378	0.0368	<0.0389	12,000
Benzo(a)anthracene	0.150	0.0552	0.0667	0.202	0.411	0.0209	0.418	0.0514	2
Benzo(a)pyrene	0.154	0.120	0.0056	0.0907	0.275	0.0228	0.246	0.0836	0.8
Benzo(b)fluoranthene	0.160	0.0967	0.0056	0.0968	0.359	0.0174	0.297	0.0836	5
Benzo(ghi)perylene	0.229	0.119	<0.0302	0.0895	0.187	<0.0312	0.423	0.116	NL
Benzo(k)fluoranthene	0.206	0.0690	0.0056	0.0650	0.205	0.0128	0.395	0.0545	49
Chrysene	0.0872	0.0518	0.0067	0.0723	0.312	0.0139	0.141	0.0442	160
Dibenzo(a,h)anthracene	0.323	0.199	<0.007	0.119	0.216	0.0081	1.35	0.143	0.8
Fluoranthene	0.247	0.0771	<0.0310	0.243	0.962	<0.0320	0.786	0.080	4,300
Fluorene	<0.0704	<0.0632	<0.0617	<0.0673	<0.0666	<0.0637	0.445	<0.0656	560
Indeno(1,2,3-cd)pyrene	0.337	0.429	<0.0097	0.567	1.75	0.0360	1.58	0.594	8
Naphthalene	<0.032	<0.029	<0.028	<0.031	<0.030	0.328	0.514	<0.030	1.8
Phenanthrene	0.196	<0.0344	<0.0336	0.126	0.476	<0.0347	0.371	<0.0357	NL
Pyrene	0.295	0.104	<0.0602	0.235	0.915	<0.0622	0.559	0.093	4,200
Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.458	1.510	5.930	0.03
Toluene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.087	0.356	<0.0119	12
Ethyl Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.287	7.870	1.010	53
Xylenes (total)	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.195	6.640	2.320	130

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	SB-10 (1-3)	SB-10 (8-10)	SB-11 (1-3)	SB-11 (8-10)	SB-12 (1-3)	SB-12 (8-10)	SB-13 (1-3)	SB-13 (8-10)	
Acenaphthene	<0.479	<0.050	<0.0681	<0.050	<0.0517	<0.0479	<0.0475	<0.0508	570
Acenaphthylene	<0.714	<0.0745	<0.0895	<0.0745	<0.077	<0.0714	<0.0707	<0.0757	NL
Anthracene	0.563	0.007	<0.0466	0.004	<0.0401	<0.0372	<0.0368	<0.0394	12,000
Benzo(a)anthracene	2.059	0.011	<0.00372	0.009	<0.0032	<0.00296	<0.00294	<0.00315	2
Benzo(a)pyrene	1.572	<0.00476	<0.00572	0.007	<0.0492	<0.00456	<0.00452	<0.00484	0.8
Benzo(b)fluoranthene	1.982	0.009	<0.00515	0.009	<0.00443	<0.0041	<0.00407	<0.00436	5
Benzo(ghi)perylene	1.339	<0.032	<0.0385	<0.032	<0.0331	<0.0307	<0.0304	<0.0325	NL
Benzo(k)fluoranthene	1.008	0.004	<0.00486	0.004	<0.00418	<0.00388	<0.00384	<0.00411	49
Chrysene	2.146	0.007	<0.00429	0.007	<0.00369	<0.00342	<0.00339	<0.00363	160
Dibenzo(a,h)anthracene	1.383	<0.00714	<0.00858	<0.00714	<0.00738	<0.00684	<0.00678	<0.00726	0.8
Fluoranthene	6.507	0.019	<0.0395	0.025	<0.0339	<0.0315	<0.0312	<0.0334	4,300
Fluorene	<0.626	<0.0653	<0.0785	<0.0653	<0.0675	<0.0626	<0.062	<0.0664	560
Indeno(1,2,3-cd)pyrene	1.180	<0.0102	<0.0123	<0.0102	<0.0106	<0.0098	<0.00972	<0.0104	8
Naphthalene	<0.285	<0.0298	<0.0357	<0.0298	<0.0308	<0.0285	<0.0282	<0.0303	1.8
Phenanthrene	3.444	0.017	<0.0428	0.011	<0.0368	<0.0341	<0.0338	<0.0362	NL
Pyrene	6.880	0.013	<0.0766	0.015	<0.0659	<0.0611	<0.0606	<0.0649	4,200
Benzene	<0.00315	<0.00310	0.008	0.157	<0.0033	<0.00315	<0.0033	<0.003	0.03
Toluene	<0.00315	<0.00310	0.020	0.108	<0.0033	<0.00315	<0.0033	<0.003	22
Ethyl Benzene	<0.00315	<0.00310	0.046	0.129	<0.0033	<0.00315	<0.0033	<0.003	13
Xylenes (total)	<0.00630	<0.00620	0.115	1.609	<0.0066	<0.00630	<0.0066	<0.006	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8021B and 8310, respectively

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Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)				Tier 1 SRO[1]
	SB-14 (1'-3')	SB-14 (8'-10')	SB-15 (1'-3')	SB-15 (8'-10')	
Acenaphthene	<0.160	<0.176	<0.160	<0.168	570
Acenaphthylene	<0.238	<0.263	<0.238	<0.250	NL
Anthracene	<0.124	<0.137	0.015	<0.130	12,000
Benzo(a)anthracene	<0.00988	<0.0109	0.061	<0.0104	2
Benzo(a)pyrene	<0.0152	<0.0168	0.063	<0.016	0.8
Benzo(b)fluoranthene	<0.0137	<0.0151	0.084	<0.0144	5
Benzo(ghi)perylene	<0.102	<0.113	0.082	<0.108	NL
Benzo(k)fluoranthene	<0.0129	<0.0143	0.040	<0.0136	49
Chrysene	<0.0114	<0.0126	0.092	<0.012	160
Dibenzo(a,h)anthracene	<0.0228	<0.0252	0.050	<0.024	0.8
Fluoranthene	<0.105	<0.116	0.152	<0.110	4,300
Fluorene	<0.209	<0.231	<0.209	<0.220	560
Indeno(1,2,3-cd)pyrene	<0.0327	<0.0361	0.058	<0.0344	8
Naphthalene	<0.095	<0.105	<0.095	<0.100	1.8
Phenanthrene	<0.114	<0.126	0.051	<0.120	NL
Pyrene	<0.204	<0.225	0.165	<0.214	4,200
Benzene	<0.00325	<0.00345	<0.0035	<0.00325	0.03
Toluene	<0.00325	<0.00345	<0.0035	<0.00325	12
Ethyl Benzene	<0.00325	<0.00345	<0.0035	<0.00325	13
Xylenes (total)	<0.00650	<0.00690	<0.0070	<0.00650	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8021B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sampling Location (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	B16 (3-5)	B16 (6-7)	B17 (3-5)	B17 (6-7)	B18 (6-7)	B18 (7-8)	B19 (3-5)	B19 (6-7)	
Acenaphthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	570
Acenaphthylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12,000
Benzo(a)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(a)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Benzo(b)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(ghi)perylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Benzo(k)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	9
Chrysene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	88
Dibenzo(a,h)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3,100
Fluorene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	560
Indeno(1,2,3-cd)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Naphthalene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1.8
Phenanthrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2,300
Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	0.030
Toluene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	12
Ethyl Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	13
Xylenes (total)	<0.0038	<0.0036	<0.0044	<0.0036	<0.0042	<0.0040	0.0026	<0.0020	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedance of the most stringent Tier 1 SRO
Italicized – Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 5035/8260B and 8310, respectively

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Table 3. Summary of Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Interval (feet)	pH	Flash Point (F)	Paint Filter	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB1-1	0-2	7.54	>180	Pass	NA	<0.004	0.0707
SB1-2	4-6	6.60	>180	Pass	NA	<0.004	0.0290
SB1-3	8-10	6.79	>180	Pass	NA	<0.004	0.1040
SB2-1	0-2	6.5	>180	Pass	NA	<0.004	0.0000[1]
SB2-2	4-6	7.08	>180	Pass	NA	<0.004	0.0363
SB3-1	0-2	6.44	>180	Pass	NA	<0.004	0.0116
SB3-2	4-6	6.15	>180	Pass	NA	<0.004	0.0222
SB3-3	8-10	6.93	>180	Pass	NA	<0.004	0.0110
SB4-1	0-2	7.08	>180	Pass	NA	<0.004	0.1270
SB4-2	4-6	6.43	>180	Pass	NA	<0.004	0.0344
SB4-3	8-10	7.43	>180	Pass	NA	<0.004	0.0490
SB5-1	0-2	6.40	>180	Pass	NA	<0.004	0.0612
SB5-2	4-6	6.48	>180	Pass	NA	<0.004	0.0214
SB5-3	8-10	7.61	>180	Pass	NA	<0.004	0.0710
SB6-1	0-2	7.14	>180	Pass	NA	<0.004	0.0612
SB6-2	4-6	6.36	>180	Pass	NA	<0.004	0.0000
SB7-1	0-2	8.37	>180	Pass	NA	<0.004	0.1705
SB7-2	4-6	6.39	>180	Pass	NA	<0.004	0.1090
SB8-1	0-2	6.22	>180	Pass	NA	<0.004	0.0501
SB8-2	4-6	7.28	>180	Pass	NA	<0.004	0.0600
SB8-3	8-10	8.33	>180	Pass	NA	<0.004	0.0049
SB9-1	0-2	7.17	>180	Pass	NA	<0.004	0.0360
SB9-2	4-6	7.31	>180	Pass	NA	0.0319	0.0832
SB9-3	8-10	6.26	>180	Pass	NA	<0.004	0.1051

[1] - Actual lab results indicate negative value
Bold - indicates an exceedance of the most stringent Tier 1 SRO of 0.0075-mg/L
NA - Sample not analyzed for this compound
pH and Paint Filter via USEPA Methods 9040/9041 and 9095, respectively
Flammability and foc via ASTM D4982 and D2974A&C, respectively
Total and TCLP Lead via USEPA Methods 6010B and 1311/6010B

Table 3 (Continued). Summary of Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Interval (feet)	pH	Flash Point (°F)	Paint Filter	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB-10	1-3	NA	NA	NA	4.32	<0.004	NA
SB-10	8-10	NA	NA	NA	4.32	0.006	NA
SB-11	1-3	NA	NA	NA	3.02	<0.004	NA
SB-11	8-10	NA	NA	NA	4.07	<0.004	NA
SB-12	1-3	NA	NA	NA	6.17	<0.004	NA
SB-12	8-10	NA	NA	NA	0.422	<0.004	NA
SB-13	1-3	NA	NA	NA	0.326	<0.004	NA
SB-13	8-10	NA	NA	NA	<0.0244	<0.004	NA
SB-14	1-3	NA	NA	NA	2.73	<0.004	NA
SB-14	8-10	NA	NA	NA	260	3.62	NA
SB-15	1-3	NA	NA	NA	19.9	<0.004	NA
SB-15	8-10	NA	NA	NA	<0.0240	<0.004	NA

[1] - Actual lab results indicate negative value
Bold - indicates an exceedance of the most stringent Tier 1 SRO of 0.0075-mg/L
NA - Sample not analyzed for this compound
pH and Paint Filter via USEPA Methods 9040/9041 and 9095, respectively
Flammability and foc via ASTM D4982 and D2974A&C, respectively
Total and TCLP Lead via USEPA Methods 6010B and 1311/6010B

Table 4. Summary of Groundwater Sampling and Analysis Results (mg/L)

Monitoring Well	BTEX	PNAs	Lead
MW-1	None Detected	None Detected	None Detected
MW-3	None Detected	None Detected	**0.016**
MW-4	None Detected	None Detected	None Detected

Bold - indicates an exceedance of the Tier 1 GRO (Tier 1 GRO for Lead = 0.0075-mg/L)
NOTE - Per the March 7, 2002 IEPA approval letter, lead is not considered a contaminant of concern
BTEX, PNAs, and Total Lead via USEPA SW-846 Methods 8260B and 8021B, 8310, and 6010B, respectively

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Table 5. Summary of Tier 1 SRO Exceedances in Vadose Zone Soils

Contaminant of Concern	Sampling Location	Sample Interval(ft bgs)	Concentration (mg/kg)	Tier 1 SRO for Migration to Groundwater (mg/kg)	Tier 1 SRO for Soil Ingestion (mg/kg)	Tier 1 SRO for Soil Inhalation (mg/kg)
Benzene	B-4	6-6.7	**1.540**	0.03	200	1.5
	B-10	6.7-7.4	**0.0863**	0.03	200	1.5
	SB-9	0-2	**0.458**	0.03	200	1.5
		4-6	**1.510**	0.03	200	1.5
Benzo(a)anthracene	SB-6	0-2	**3.56**	2	8	NA
		4-6	**4.80**	2	8	NA
	SB-10	1'-3'	**2.089**	2	8	NA
Benzo(a)pyrene	SB-6	0-2	**2.26**	8	0.8	NA
		4-6	**2.71**	8	0.8	NA
	SB-10	1-3	**1.572**	8	0.8	NA
Dibenzo(a,h)anthracene	B-9	4.5-5.2	**1.550**	2	0.8	NA
	SB-6	0-2	**1.79**	2	0.8	NA
		4-6	**2.74**	2	0.8	NA
	SB-9	4-6	**1.35**	2	0.8	NA
Indeno(1,2,3-cd)pyrene	SB-6	0-2	**12.50**	14	8	NA
		4-6	**13.9**	14	8	NA

Bold - Indicates an exceedence of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

Table 6. Exceedances of the Tier 1 SROs for the Ingestion and Inhalation Exposure Pathways

Contaminant of Concern	Sampling Location	Sample Depth (ft bgs)	Concentration (ppm)	Tier 1 SRO for Soil Ingestion (ppm)	Tier 1 SRO for Soil Inhalation (ppm)
Benzene	B-4	6'-6.7'	5.93	200	1.5
Benzo(a)pyrene	SB-6	0'-2'	**2.26**	0.8	NA
Dibenzo(a,h)anthracene		0'-2'	**1.79**	0.8	NA
Indeno(1,2,3-cd)pyrene		0'-2'	**12.50**	8	NA
Benzene	SB-9	4'-6'	**1.510**	200	**1.5**
		8'-10'	**5.930**	200	**1.5**
Benzo(a)pyrene	SB-10	1'-3'	**1.572**	0.8	NA

Bold - indicates an exceedence of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

Table 7. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit

Compound	Maximum Observed Concentration[1] (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	1.51	870
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

[1] - Maximum observed concentrations summarized in Table 5
NA - A Soil Saturation Limit has not been established for this compound in 742 Appendix A, Table A

Table 8. Tier 2 SROs and Maximum Observed Contaminant Concentrations

Contaminant	Maximum Observed Concentration (mg/Kg)	Tier 1 SRO for the Migration to Groundwater Exposure Pathway (mg/Kg)	Calculated Tier 2 SRO[1] (mg/Kg)
Benzene	1.51	0.03	19.93
Benzo(a)anthracene	4.80	2	95.93
Benzo(a)pyrene	2.71	8	1,012.67
Dibenzo(a,h)anthracene	2.74	2	743.43
Indeno(1,2,3-cd)pyrene	13.9	14	$5.53X10^5$

[1] - Tier 2 calculations are provided in Appendix A of this report.

Table 9. Distance Required for COC's to Attenuate vs Distance Across Ogden Avenue

Contaminant	Sample Location[1]	Distance to Attenuate	Distance Across Ogden Avenue
Benzo(a)anthracene	SB-10	78	196
Benzo(a)pyrene	SB-10	29	196
Dibenzo(a,h)anthracene	SB-9	<1.0	198
Indeno(1,2,3-cd)pyrene	SB-6	42.5	462
Benzene	B-5	131.3	198
Ethylbenzene	B-9	17.7	368

[1]- Sample location with shortest distance from west side of Ogden Avenue chosen for purpose of R26 calculations.

Table 10. Summary of Estimated Hydraulic Conductivities

Monitoring Well	Hydraulic Conductivity (cm/day)
MW-1	6.5
MW-4	5.0

bold – indicates value used in Tier 2 calculations

APPENDIX A
REVISED FATE AND TRANSPORT MODELING

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Soil Component of the Groundwater Ingestion Exposure Route Across Ogden Avenue

Remediation Objective RO (mg/kg) = GW_{source}/LF_{sw}
Groundwater at the source, GW_{source} (mg/L) = $GW_{comp}/(C_{(x)}/C_{source})$
Leaching Factor, LF_{sw} [(mg/L_{water})/(mg/kg_{soil})] = $(\rho_s*(cm^3*kg)/(L*g))/((\theta_{wa}+(k_a*\rho_a)+(H*\theta_{aa}))*(1+((U_{gw}*\delta_{gw})/(I*W)))$
Volumetric Water Content in Vadose Zone Soils, θ_{wa} (cm^3_{water}/cm^3_{soil}) = $w*\rho_a/\rho_w$
Volumetric Air Content in Vadose Zone Soils, θ_{aa} (cm^3_{air}/cm^3_{soil}) = $\theta_T-(w*\rho_a/\rho_w)$
Soil-Water Sorption Coefficient, k_a = $K_{oc}*f_{oc}$
Groundwater Darcy Velocity, U_{gw} (cm/yr) = K*I

Solving for Groundwater at the source

GW_{source} (mg/L) = $GW_{comp}/(C_{(x)}/C_{source})$

GW_{comp} (mg/L) =	0.00013	chemical specific (Benzo(a)anthracene here)	TACO
	0.0002	chemical specific (Benzo(a)pyrene here)	
	0.0003	chemical specific (Dibenzo(a,h)anthracene here)	
	0.00043	chemical specific (Ideno(1,2,3-cd)pyrene here)	
	0.005	chemical specific (Benzene here)	
	0.7	chemical specific (Ethylbenzene here)	
$(C_{(x)}/C_{source})$ =	See Table Below		TACO calc
GW_{source} =	0.120284	Benzo(a)anthracene	
	0.495536	Benzo(a)pyrene	
	0.097699	Dibenzo(a,h)anthracene	
	81.33077	Indeno(1,2,3-cd)pyrene	
	63.86111	Benzene	
	4.85E+11	Ethylbenzene	

Contaminant Remaining	C(source)	x-cm	alpha-x	alpha-y	alpha-z	Sw-cm	Sd	lambda-s	K	theta-t	I	U	C(x)	C(x)/C(source)
Chemical	mg/L	feet	cm	cm	cm	cm	cm	K/day	cm/d		gradient	cm/day	mg/L	
Benzo(a)anthracene	0.120284469	5974	597.408	199.136	29.8704	2743.2	200	0.00051	6.54046	0.36	0.0222222	0.4037	0.00013	1.1E-03
Benzo(a)pyrene	0.4955357058	5974	597.408	199.136	29.8704	2743.2	200	0.00005	6.54046	0.36	0.0222222	0.4037	0.0002	4.0E-04
Dibenzo(a,h)anthracene	0.0976994009	8035	803.504	201.168	30.1752	2743.2	200	0.00037	6.54046	0.36	0.0222222	0.4037	0.0003	3.1E-03
Indeno(1,2,3-cd)pyrene	81.33077279	14062	1406.176	489.392	70.4088	2743.2	200	0.00047	6.54046	0.36	0.0222222	0.4037	0.00043	5.3E-06
Benzene	63.86110762	8035	803.504	201.168	30.1752	2743.2	200	0.0009	6.54046	0.36	0.0222222	0.4037	0.005	7.8E-05
Ethylbenzene	4.85435E+11	11217	1121.664	373.888	56.0832	2743.2	200	0.003	6.54046	0.36	0.0222222	0.4037	0.7	1.4E-12

C(source) = Maximum observed groundwater concentration
x = Distance from point of exceedance across Ogden Ave in direction of groundwater flow (shortest distance used if more than one point)
Sw = Width of contaminated area perpendicular to groundwater flow direction, See Attached Figure A-1
Sd = Source Depth, 200-cm default value.
K = Hydraulic conductivity measured by DAI
theta-t = Total Porosity taken as TACO default for clay
I = Hydraulic Gradient taken from DAI's static water level measurements
C(x) = Desired groundwater concentration at distance x (across Ogden Ave)
C(x)/C(source) = Attenuation Factor

Solving for Soil-Water Sorption Coefficient

$k_s = K_{oc} * f_{oc}$

K_{oc} (cm³/g) =	398000	chemical specific (Benzo(a)anthracene here)	TACO
	1020000	chemical specific (Benzo(a)pyrene here)	
	3800000	chemical specific (Dibenzo(a,h)anthracene here)	
	3470000	chemical specific (Ideno(1,2,3-cd)pyrene here)	
	58.9	chemical specific (Benzene here)	
	383	chemical specific (Ethylbenzene here)	
f_{oc} (g/g) =	0.002	default for subsurface soil	RBCA
k_s =	796	(cm³/g)	
	2040		
	7600		
	6940		
	0.1178		
	0.726		

Solving for Groundwater Darcy Velocity

U_{gw} (cm/yr) = K*i

K (cm/yr) =	2387.2762	site specific	calculated
i (cm/cm) =	0.0222222	site specific	calculated
U_{gw} =	53.05056		

Solving for Leaching Factor

LF_{sw} ((mg/L$_{water}$)/(mg/kg$_{soil}$)) = (ρ_s*(cm³*kg)/(L*g))/((θ$_{ws}$+(k_s*ρ_s)+(H'*θ$_{as}$))*(1+((U$_{gw}$*δ$_{gw}$)/(I*W))))

ρ_s (g/cm³) =	1.7	default for clay	RBCA
θ_{ws} =	0.3	default for subsurface soil	RBCA
k_s =	796	calculated above	TACO calc
	2040		
	7600		
	6940		
	0.1178		
	0.726		
H' =	0.000137	chemical specific (Benzo(a)anthracene here)	TACO
	6.31E-05	chemical specific (Benzo(a)pyrene here)	
	6.03E-07	chemical specific (Dibenzo(a,h)anthracene here)	
	6.56E-05	chemical specific (Ideno(1,2,3-cd)pyrene here)	
	0.228	chemical specific (Benzene here)	
	0.323	chemical specific (Ethylbenzene here)	
θ_{as} =	0.13	default for subsurface soils	TACO
U_{gw} =	53.05056	calculated above	TACO calc
δ_{gw} (cm) =	200	default	RBCA
I (cm/yr) =	30	default	RBCA
W (cm) =	4206.24	site specific	
LF_{sw} =	0.001159	Benzo(a)anthracene	
	0.000452	Benzo(a)pyrene	
	0.000121	Dibenzo(a,h)anthracene	
	0.000133	Ideno(1,2,3-cd)pyrene	
	2.959326	Benzene	
	0.994697	Ethylbenzene	

Solving for Remediation Objective

	RO (mg/kg) = GW_{source}/LF_{sw}	
GW_{Source} =	0.1202845	Benzo(a)anthracene
	0.4955358	Benzo(a)pyrene
	0.0978994	Dibenzo(a,h)anthracene
	81.330772	Ideno(1,2,3-cd)pyrene
	63.861137	Benzene
	4.854E+11	Ethylbenzene
LF_{sw} =	0.0011586	calculated above
	0.0004521	
	0.0001214	
	0.0001329	
	2.9693255	
	0.9948969	

TACO calc

RO =			
109.92	mg/kg	Benzo(a)anthracene	
1095.886		Benzo(a)pyrene	
804.9666		Dibenzo(a,h)anthracene	
611916.2		Ideno(1,2,3-cd)pyrene	
21.57962		Benzene	
4.88E+11		Ethylbenzene	400 default to soil saturation limit

Groundwater Ingestion Exposure Route Across Ogden Ave

Solving for Remediation Objective

	RO (mg/kg) = GW_{source}/LF_{sw}	
Soil Conc (obs) =	2.059	Benzo(a)anthracene
	1.572	Benzo(a)pyrene
	1.35	Dibenzo(a,h)anthracene
	13.9	Ideno(1,2,3-cd)pyrene
	1.51	Benzene
	16.1	Ethylbenzene
LF_{sw} =	0.00116	calculated
	0.00045	
	0.00012	
	0.00013	
	2.95933	
	0.9849	

TACO calc

GW_{source}	0.00238	mg/kg	Benzo(a)anthracene
	0.00071		Benzo(a)pyrene
	0.00016		Dibenzo(a,h)anthracene
	0.00185		Ideno(1,2,3-cd)pyrene
	4.46856		Benzene
	15.0229		Ethylbenzene

Solving for Groundwater Migration from the source

Chemical	C(source)	x-cm	alpha-x	alpha-y	alpha-z	Sw-cm	Sd	velocity	K	theta-t	I	U	C(x)	C(x)/C(source)
Limit Exceedance	(mg/L)	(miles)	cm	cm	cm	(20-ft)	cm	m/day	cm/d		gradient	cm/day	(mg/L)	
Benzo(a)anthracene	0.0023855	2,377	237.744	79.2480	11.8872	3,048	200	0.00061	6.54048	0.36	0.02222222	0.40373333	0.00013	0.052724988362
Benzo(a)pyrene	0.0007109	684	68.392	22.8640	4.4196	3.048	200	0.00065	6.54048	0.36	0.02222222	0.40373333	0.00020	0.27588810658
Dibenzo(a,h)anthracene	0.0001639	30	3.048	1.0160	0.1524	3.048	200	0.00037	6.54048	0.36	0.02222222	0.40373333	0.00016	0.072528897115
Indeno(1,2,3-cd)pyrene	0.0016475	1,295	129.54	43.1800	6.477	3.048	200	0.00047	6.54048	0.36	0.02222222	0.40373333	0.00048	0.231642365832
Benzene	4.4685816	4,002	400.2024	133.4008	20.01012	3.048	200	0.0009	6.54048	0.36	0.02222222	0.40373333	0.00468	0.001116404857
Ethylbenzene	15.022944	538	53.8496	17.9332	2.69748	3.048	200	0.003	6.54048	0.36	0.02222222	0.40373333	0.69888	0.046517540183

C(source) = Maximum observed groundwater concentration

x = Distance from point of exceedance across Ogden Ave in direction of groundwater flow (shortest distance used if more than one point)

Sw = Width of contaminated area perpendicular to groundwater flow direction, See Attached Figure A-1

Sd = Source Depth, 200-cm default value.

K = Hydraulic conductivity measured by DAI

theta-t = Total Porosity taken as TACO default for clay

I = Hydraulic Gradient taken from DAI's static water level measurements

C(x) = Desired groundwater concentration at distance x (across Ogden Ave)

C(x)/C(source) = Attenuation Factor

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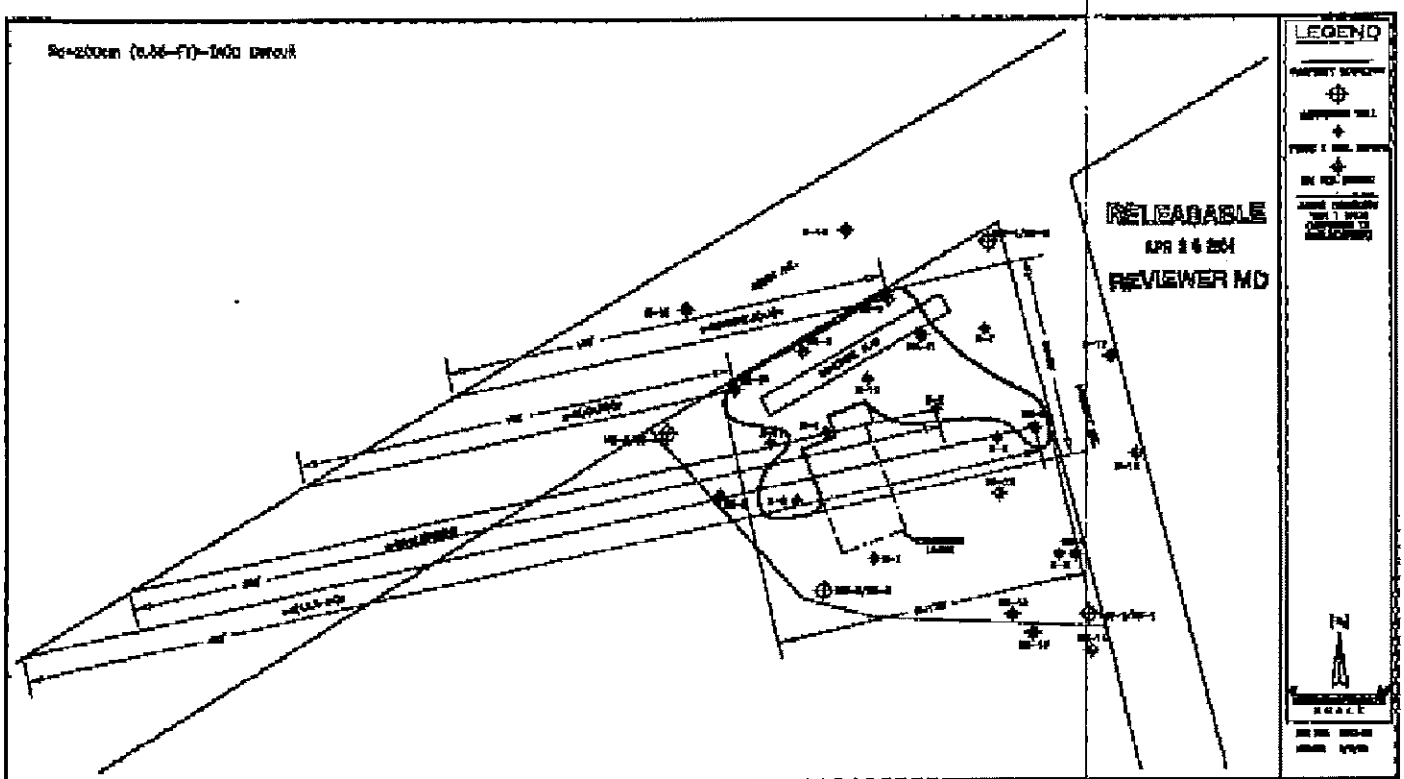
Distance to Attenuation in Feet Based Upon R26 Modeling Equation

	x in ft
Benzo(a)anthracene	78
Benzo(a)pyrene	29
Dibenzo(a,h)anthracene	<1
Indeno(1,2,3-cd)pyrene	42.5
Benzene	131.3
Ethylbenzene	17.7

printed 08/20/2007 3:08 by cpatrick p. 19/82



ENVIRONMENTAL DAI

MGO YARD 1B
4x26 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE A-1
X-26 PARAMETERS AND
GROUNDWATER FLOW DIRECTION

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APPENDIX B
HIGHWAY AUTHORITY AGREEMENT

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TIERED APPROACH TO CORRECTIVE-ACTION OBJECTIVES AGREEMENT

This Agreement is entered into this 21st day of January, 2004 pursuant to 35 Ill. Admin. Code Section 742.1020 by and between Material Service Corp. ("Owner/Operator") referred to herein as "Owner/Operator," and the State of Illinois Department of Transportation ("Department"), as follows:

1. This Agreement is not binding upon the Department until it is executed by the undersigned representative of the Department and prior to execution, this Agreement constitutes an offer by Owner/Operator. The duly authorized representatives of Owner/Operator have signed this Agreement and this Agreement is binding upon them, their successors and assigns.

2.a. Owner/Operator is pursuing a corrective action of a Site and of the right-of-way adjacent to the boundary of the Site located at 4226 South Lawndale Avenue, Lyons, Illinois (the "Site").

2.b. Attached as Exhibit A are site maps prepared by Owner/Operator which show the area of estimated contaminant impacted soil and/or groundwater at the time of this Agreement in the right-of-way above Tier 1 residential levels under 35 Ill. Admin. Code Part 742. Also shown in Exhibit A are tables prepared by Owner/Operator showing the concentration of contaminants of concern, hereafter "Contaminants," in soil and/or groundwater within the Site and which shows the applicable Tier 1 soil remediation objectives for residential property and Tier 1 objectives for groundwater of the Illinois Pollution Control Board ("IPCB") which are exceeded along the boundary of the Site adjacent to the Right-of-Way. The right-of-way, and only the right-of-way, as described in Exhibit B, hereinafter the "Right-of-Way," adjacent to the Site is subject to this Agreement. As the drawings in the Exhibits are not surveyed plats, the boundary of the Right-of-Way in the Exhibits may be an approximation of the actual right-of-way lines.

The Right-of-Way is impractical to sample for Contaminants; however, the parties believe that the area of the Right-of-Way is adequate to encompass soil and/or groundwater within the Right-of-Way possibly impacted with Contaminants from a release at the Site.

2.c. The Illinois Emergency Management Agency has assigned incident number 951401 to this release at the Site.

2.d. Owner/Operator intends to request risk-based, site specific soil and/or groundwater remediation objectives from the Illinois Environmental Protection Agency ("IEPA") under 35 Ill. Admin. Code Part 742.

2.e. Under these rules, use of risk-based, site specific remediation objectives in the Right-of-Way may require the use of a Highway Authority Agreement as defined in 35 Ill. Admin. Code Section 742.1020.

3. The Department holds a fee simple interest or a dedication for highway purposes in the Right-of-Way, or the Right-of-Way is a platted street, and has jurisdiction of the Right-of-Way. For purposes of this Agreement, "jurisdiction" means that the Department exercises access control over the use of groundwater beneath the Right-of-Way and over access to the soil beneath the Right-of-Way because it requires a permit for that access.

4.a. Under 35 Ill. Admin. Code Section 742.1020, this Agreement is intended to be an acceptable "Highway Authority Agreement" to IEPA, as the Department is willing to agree that it will not allow the use of groundwater under the highway Right-of-Way as a potable or other domestic supply of water and that it will limit access as described herein to soil under the highway Right-of-Way that is contaminated from the release at levels above residential Tier 1 remediation objectives.

4.b. The IEPA and Illinois Attorney General ("AG") must review and approve this Agreement, and this Agreement shall be referenced in the IEPA's "No Further

Remediation" determination in the chain of title for the Site in the county where the Site is located.

4.c. This Agreement shall be null and void as a Highway Authority Agreement should the IEPA or AG not approve it or should it not be referenced in the "No Further Remediation" determination, provided, however, that this Agreement shall be effective between the Owner/Operator and the Department immediately upon signature by their representatives.

5. The Department promises IEPA and the Owner/Operator that it will prohibit the use of groundwater that is contaminated from the release at the Site at levels above Tier 1 remediation objectives beneath its Right-of-Way as a potable or other domestic supply of water and will limit access to soil as described herein under the Right-of-Way that is contaminated from the release at the Site at levels above Tier 1 remediation objectives. As the pavement in the Right-of-Way may be considered an engineered barrier, the Owner/Operator agrees to reimburse the Department for maintenance activities requested by Owner/Operator in writing in order to maintain it as a barrier. The Department does not otherwise agree to perform maintenance of the Right-of-Way, nor does it agree that the highway Right-of-Way will always remain a highway or that it will maintain the Right-of-Way as an engineered barrier.

6. The Owner/Operator agrees to defend, indemnify and hold harmless the Department, and other highway authorities, if any, maintaining the highway Right-of-Way by an agreement with the Department, and the Department's agents, contractors or employees for all obligations asserted against or costs incurred by them, including reasonable attorney's fees and court costs, associated with the release of Contaminants from the Site, regardless whether said obligations or costs were caused by the negligence, but not the gross negligence, of them.

7. As an additional consideration, Owner/Operator agrees to reimburse the Department for the reasonable costs it has incurred in protecting human health and the environment, including, but not limited to, identifying, investigating, handling, storing and disposing of contaminated soil and groundwater in the Right-of-Way as a result of the release of Contaminants at this Site. The Department has documented those costs for Owner. Those costs amount to (Not Applicable). If costs have been incurred, a cashier's check made payable to "Treasurer, State of Illinois" shall be tendered to the Department of Transportation at the time Owner/Operator furnishes a signed Agreement to the Department for its signature. That check will be deposited when this Agreement is signed by all necessary parties.

8. This Agreement shall be binding upon all successors in interest to the Owner/Operator and to the interest of the Department in the highway Right-of-Way. A successor in interest of the Department would include a highway authority to which the Department would transfer jurisdiction of the highway.

9. Violation of the terms of this Agreement by Owner/Operator, or their successors in interest, may be grounds for voidance of this Agreement as a Highway Authority Agreement. Violation of the terms of this Agreement by the Department will not void this Agreement, unless the IEPA has determined that the violation is grounds for voiding this Agreement as a Highway Authority Agreement and the Department has not cured the violation within such time as IEPA has granted to cure the violation.

10. This Agreement shall continue in effect from the date of this Agreement until the Right-of-Way is demonstrated to be suitable for unrestricted use and there is no longer a need for this Agreement as a Highway Authority Agreement, and the IEPA has, upon written request to the IEPA by the Owner/Operator and notice to the Department, amended the notice in the chain of title of the Site to reflect unencumbered future use of that highway Right-of-Way.

11. This Agreement is in settlement of claims the Department may have arising from the release of Contaminants into the Right-of-Way associated with incident number 951401.

12. This Agreement does not limit the Department's ability to construct, reconstruct, improve, repair, maintain and operate a highway upon its property or to allow others to use the highway Right-of-Way by permit. To that extent, the Department reserves the right and the right of those using its property under permit to remove contaminated soil or groundwater above Tier 1 residential remediation objectives from its Right-of-Way and to dispose of them as they deem appropriate not inconsistent with applicable environmental regulations so as to avoid causing a further release of the Contaminants and to protect human health and the environment.

Prior to taking any such action, the Department will first give Owner/Operator written notice, unless there is an immediate threat to the health or safety to any individual or to the public, that it intends to perform a site investigation in the Right-of-Way and remove or dispose of contaminated soil or groundwater to the extent necessary for its work. Failure to give notice is not a violation of this Agreement. The removal or disposal shall be based upon the site investigation (which may be modified by field conditions during excavation). A copy of the site investigation report will be provided to Owner/Operator. If practicable, as reasonably determined by the Department, the Department may provide Owner/Operator with an opportunity to perform the Site investigation and to remove and dispose of the contaminated soil and/or groundwater necessary for the Department's work in advance of that work.

The Owner/Operator shall reimburse the reasonable costs incurred by the Department to perform the site investigation and to dispose of any contaminated soil or groundwater, provided, however, that if notice to Owner/Operator has not been given and there was no immediate threat to health or safety, reimbursement for those costs shall be limited to $10,000.00. There is a rebuttable presumption that the Contaminants found in the

highway Right-of-Way arose from the release of Contaminants from the Site. Should Owner/Operator not reimburse the reasonable costs under the conditions set forth herein, this Agreement shall be null and void, at the Department's option, upon written notice to Owner/Operator by the Department that those costs have not been reimbursed. Owner/Operator may cure that problem within twenty working days by making payment, or may seek to enjoin that result.

13. Written notice required by this Agreement shall be mailed to the following:

If to Owner/Operator:

Name: Gary O'Toole
Company: Material Service Corp.
Street: 4226 South Lawndale Avenue
City, State, Zip: 60534-1199

If to Department:

John P. Kos, District One Engineer
201 West Center Court
Schaumburg, Illinois 60196
Telephone: 847/705-4110

14. The Department's sole responsibility under this Agreement with respect to others using the highway Right-of-Way under permit from the Department is to include the following, or similar language, in the future standard permit provisions and to make an effort to notify its current permit holders of the following:

As a condition of this permit, the permittee shall request the District Permit Office to identify sites in the Right-of-Way where access to contaminated soil or groundwater is governed by Tiered Approach to Corrective-Action Objectives ("TACO") Agreements. The permittee shall take measures before, during and after any access to these sites to protect worker safety and human health and the environment. Excavated, contaminated soil should be

managed off-site in accordance with all environmental laws and regulations.

Owner/Operator hereby releases the Department from liability for breach of this Agreement by others under permit and agrees to defend and indemnify the Department against claims that may arise from others under permit causing a breach of this Agreement. Owner/ Operator agrees that its personnel, if any, at the Site who are aware of this Agreement will notify anyone they know is excavating in the Right-of-Way about this Agreement.

15. Should the Department breach this Agreement, Owner/Operator's sole remedy is for an action for damages in the Illinois Court of Claims. Any and all claims for damages against the Department, its agents, contractors, employees or its successors in interest arising at any time for a breach of paragraph 5 of this Agreement are limited to an aggregate maximum of $20,000.00. No other breach by the Department, its agents, contractors, employees and its successors in interest of a provision of this Agreement is actionable in either law or equity by Owner/Operator against the Department or them and Owner/Operator hereby releases the Department, its agents, contractors, employees and its successors in interest for any cause of action it may have against them, other than as allowed in this paragraph, arising under this Agreement or environmental laws, regulations or common law governing the contaminated soil or groundwater in the highway Right-of-Way. Should the Department convey, vacate or transfer jurisdiction of that highway Right-of-Way, Owner/Operator may pursue an action under this Agreement against the successors in interest, other than a State agency, in a court of law.

16. This Agreement is entered into by the Department in recognition of laws passed by the General Assembly and regulations adopted by the Pollution Control Board which encourage a tiered-approach to remediating environmental contamination. This

Agreement is entered into by the Department in the spirit of those laws and under its right and obligations as a highway authority. Should any provisions of this Agreement be struck down as beyond the authority of the Department, however, this Agreement shall be null and void.

IN WITNESS WHEREOF, Owner/Operator, Material Service Corp., has caused this Agreement to be signed by its duly authorized representative.

BY: Gary W. Tool DATE: JAN. 15, 2004
(Title) DIRECTOR

IN WITNESS WHEREOF, the Department has caused this Agreement to be signed by its Secretary.

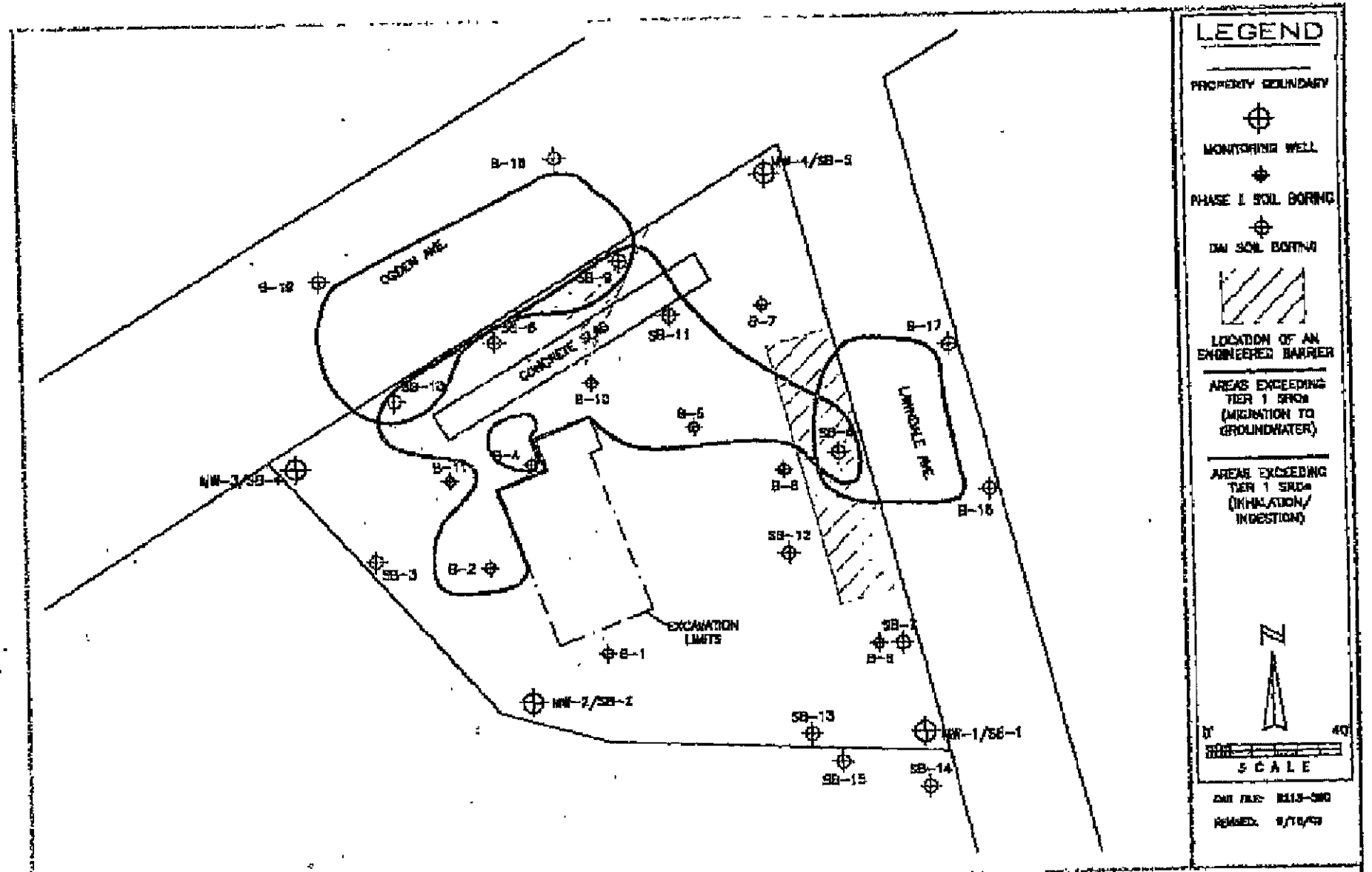
Illinois Department of Transportation

BY: DATE: 1/21/04
Timothy W. Martin
Secretary

This Agreement is approved on behalf of the Office of the Illinois Attorney General.

BY: DATE: 1/29/04

EXHIBIT A



ENVIRONMENTAL DAI

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 1
EXTENT OF CONTAMINATION AND
AREA REQUIRING AN ENGINEERED BARRIER

Table 1. Summary of Soil Sample Analyses for BTEX and Polynuclear Aromatics near Right-of-Way (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)							Tier 1 SRO[1]
	SB6-1 (0-2)	SB6-2 (4-6)	SB9-1 (0-2)	SB9-2 (4-6)	SB9-3 (8-10)	SB-10 (2-5)	SB-10 (8-10)	
Acenaphthene	<0.047	<0.051	0.158	0.646	<0.050	<0.479	<0.050	570
Acenaphthylene	<0.0697	<0.0759	*0.281*	*0.632*	<0.0748	<0.714	<0.0745	NL
Anthracene	1.74	2.24	<0.0378	0.0368	<0.0389	0.563	0.007	12,000
Benzo(a)anthracene	3.56	4.80	0.0209	0.418	0.0514	2.059	0.011	0.9
Benzo(a)pyrene	2.26	2.71	0.0220	0.246	0.0836	1.572	<0.00476	0.09
Benzo(b)fluoranthene	2.60	3.25	0.0174	0.297	0.0836	1.982	0.009	0.9
Benzo(ghi)perylene	*1.25*	*1.84*	<0.0312	*0.433*	*0.116*	*1.339*	<0.032	NL
Benzo(k)fluoranthene	1.72	2.16	0.0128	0.395	0.0645	1.008	0.004	9
Chrysene	2.46	3.18	0.0139	0.141	0.0442	2.146	0.007	88
Dibenzo(a,h)anthracene	1.79	2.74	0.0081	1.35	0.243	1.183	<0.00714	0.09
Fluoranthene	8.80	12.0	<0.0520	0.786	0.080	6.507	0.019	3,100
Fluorene	<0.0611	<0.0665	<0.0637	0.445	<0.0656	<0.626	<0.0653	560
Indeno(1,2,3-cd)pyrene	12.50	13.9	0.0360	1.50	0.594	1.180	<0.0102	0.9
Naphthalene	<0.028	<0.030	0.128	0.514	<0.030	<0.285	<0.0298	12
Phenanthrene	*4.58*	*6.17*	<0.0347	*0.371*	<0.0357	*3.444*	*0.017*	NL
Pyrene	8.21	11.1	<0.0622	0.559	0.093	6.880	0.013	2,300
Benzene	<0.0111	<0.0121	0.488	1.510	5.930	<0.00315	<0.00310	0.03
Toluene	<0.0111	<0.0121	0.087	0.356	<0.0119	<0.00315	<0.00310	12
Ethylbenzene	<0.0111	<0.0121	0.287	7.870	1.010	<0.00315	<0.00310	13
Xylenes (total)	<0.0111	<0.0121	0.195	6.640	2.320	<0.00630	<0.00620	150

[1] - Most stringent Soil Remediation Objective based on Residential property usage taken from 35 IAC 742 Appendix B, Table B
Bold – Indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods SW8260B/5035 and SW8310, respectively

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Table 1 (Continued). Summary of Soil Sample Analyses for BTEX and Polynuclear Aromatics in Right-of-Way (mg/Kg)

Compound	Sampling Location (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	BH6 (5-5)	BH6 (5-7)	BH7 (5-5)	BH7 (5-7)	BH8 (5-5)	BH8 (7-9)	BH9 (3-5)	BH9 (5-7)	
Acenaphthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	570
Acenaphthylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12,000
Benzo(a)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(a)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Benzo(b)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(ghi)perylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Benzo(k)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	9
Chrysene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	88
Dibenzo(a,h)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3,100
Fluorene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	560
Indeno(1,2,3-cd)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Naphthalene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12
Phenanthrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2,300
Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	0.03
Toluene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	12
Ethyl Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	13
Xylenes (total)	<0.0038	<0.0036	<0.0044	<0.0036	<0.0042	<0.0040	0.0026	<0.0020	150

[1] - Most stringent Soil Remediation Objective based on Residential property usage taken from 35 IAC 742 Appendix B, Table B
Bold - Indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods SW8260B/5035 and SW8310, respectively

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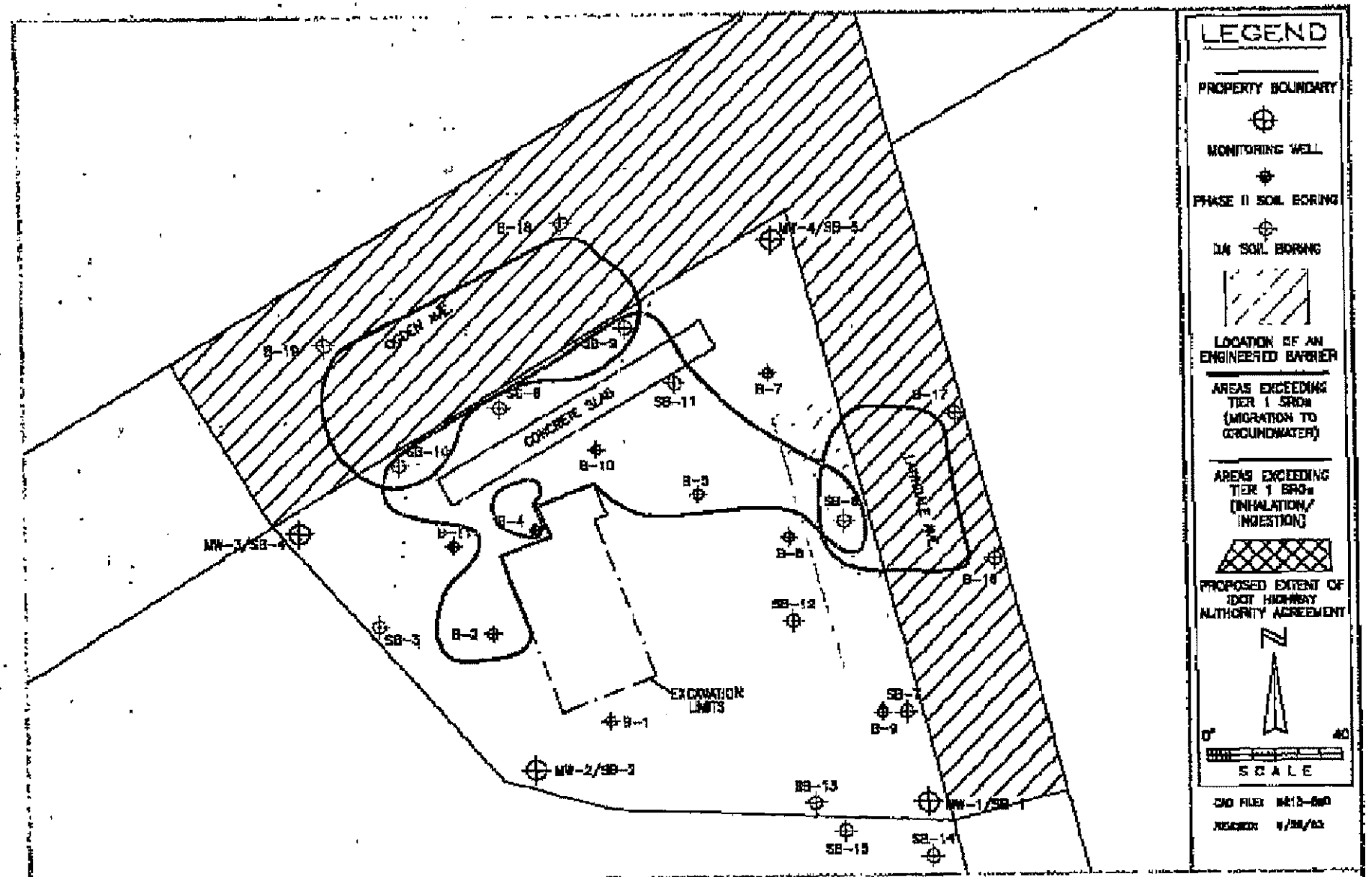
EXHIBIT B



ENVIRONMENTAL DAI

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 2
AREA OF PROPOSED IDOT
HIGHWAY AUTHORITY AGREEMENT

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APPENDIX C
GROUNDWATER INGESTION PATHWAY EXCLUSION DEMONSTRATION

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The groundwater ingestion pathway can be excluded if the requirements of 35 IAC 742.300, 742.305, 742.320, and 742.1015 are met. The meeting of these requirements are discussed below.

742.305a: This part requires that the sum of the concentrations of concern (or organic contaminants) do not exceed the soil attenuation capacity. The soil attenuation capacity is defined in 742.215. For the purposes of this analysis, the soil attenuation capacity is equal to the natural organic carbon concentration of the soil. Table 4 in the Section 3.2.3 reports the Fraction of Organic Carbon (f_{oc}) observed in twenty-four (24) soil samples collected from the site. Based upon these results, the average f_{oc} of the subsurface soils at the site is 5.5% which is equivalent to 55,000-mg/Kg. Review of the soil sampling and analysis results summarized in Table 3 of the text of this report clearly indicate that the sum of all organic compounds observed at any discrete sampling point is significantly below the soil attenuation capacity (55,000-mg/Kg) of the soils. Therefore, the soil attenuation capacity is not exceeded at any location on the site.

742.305b: This part requires that the sum of concentrations of any organic contaminants of concern remaining in the soil do not exceed the soil saturation limit as determined in 742.220. The soil saturation limits for compounds whose melting points are less than 30°C are provided in 742 Appendix A, Table A. Table F-1 compares the maximum detected concentrations of the contaminants of concern to those provided in 742 Appendix A, Table A, and indicates that none of the observed concentrations exceed the soil saturation limit.

Table C-1. Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils and Soil Saturation Limit

Compound	Maximum Observed Concentration (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	1.51	870
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

NA - A Soil Saturation Limit has not been established for this compound in 35 IAC 742 Appendix A, Table A

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742.305c: This requires that none of the soils exhibit any of the characteristics of reactivity for hazardous wastes. There is no evidence nor reason to believe that any soils beneath the site exhibit the characteristics of reactivity.

742.305d: This requires that none of the soils exhibit a pH less than 2.0 or greater than 12.5. Twenty-four (24) soil samples were analyzed for pH via USEPA Method 9045. The results of these analyses were summarized in Table 4 in the Tables Section of this report. The pH of these samples ranged from 6.15 to 8.37.

742.305e: This requires that none of the soils are hazardous wastes by virtue of the characteristic of toxicity for the following compounds: arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver. The TCLP Lead concentrations observed in the thirty-five (35) soil samples were below the hazardous regulatory level (5-mg/L).

742.320a: This requires that the above-discussed requirements of 742.305 are met.

742.320b: This requires that any free product has been removed by corrective action to the maximum extent possible. No free product was observed during the investigations.

742.320c: This requires that the source of the release is not located within the minimum or maximum setback zone of a potable water supply well nor within a regulated recharge area of a potable water supply well. The Village of Lyons Ordinance Number 5-18-99-3 prohibiting use of groundwater as a potable water supply well insures adherence to this requirement.

742.320d: A demonstration of compliance with 742.1015 is included below.

742.320e: This requirement addresses the potential contamination of an existing water supply well. As previously discussed, no potable groundwater supply wells presently exist, nor will they be allowed in the future by virtue of the ordinance, and therefore, this requirement is not applicable.

742.320f: This requirement states that the concentration of any contaminants in groundwater discharging into a surface water must meet the applicable surface water quality standard. No contaminants will migrate or be discharged to any surface water body. This is proven by the R26 calculations that demonstrate all contamination will fully attenuate to the Tier 1 Class I GROs before crossing Ogden Ave.

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742.1015a: This requirement ensures that if the installation of public potable water supply wells by a unit of local government is not expressly prohibited, a Memorandum of Understanding (MOU) is entered into. The Village of Lyons Ordinance Number 5-18-99-3 has been approved by the IEPA without requiring a Memorandum of Understanding (MOU).

742.1015b(1): A certified copy of the ordinance was included as Attachment A of Appendix C of the original CACR. It has since been approved without requiring an MOU.

742.1015b(2): No contaminants of concern were detected in the groundwater.

742.1015b(3): No contaminant of concern were detected in the groundwater.

742.1015b(4): Material Service Corporation (MSC), the current owner of the site, also owns the property to the west onto which contaminated groundwater has migrated. IDOT owns the property on which Ogden Avenue is paved. A Highway Authority Agreement will be obtained in regards to contamination under the road.

742.1015b(5): Material Service Corporation (MSC), the current owner of the site, also owns the property to the west onto which contaminated groundwater has migrated. IDOT owns the property on which Ogden Avenue is paved. A Highway Authority Agreement will be obtained in regards to contamination under the road.

742.1015c: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015d: The property owner will comply with this requirement.

742.1015e: The property owner will comply with this requirement upon receipt of approval of the proposed GROs and SROs from the IEPA.

742.1015f: No MOU has been entered into and is not required per IEPA. See demonstration of compliance with 742.1015a.

742.1015g: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015h: DAI concurs that the three (3) items detailed will be grounds for voidance of the NFR letter.

742.1015i: No MOU is required per IEPA. See demonstration of compliance with 742.1015a.

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APPENDIX D
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION

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The following demonstrates that the engineered barrier is in compliance with 35 IAC 742.1105.

742.1105a:	The engineered barrier is not natural attenuation, access control, or a point of use treatment. Direct human exposure to groundwater will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.
742.1105b:	The engineered barrier is used in conjunction with a Tier 2 determination of remediation objectives.
742.1105c (1):	The soil component of the groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.
742.1105c (2):	The soil ingestion exposure route will be eliminated through an asphalt cap.
742.1105c (3):	The soil inhalation exposure route will be eliminated through an asphalt cap.
742.1105c (4):	The groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.

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APPENDIX E
PHOTOGRAPHS

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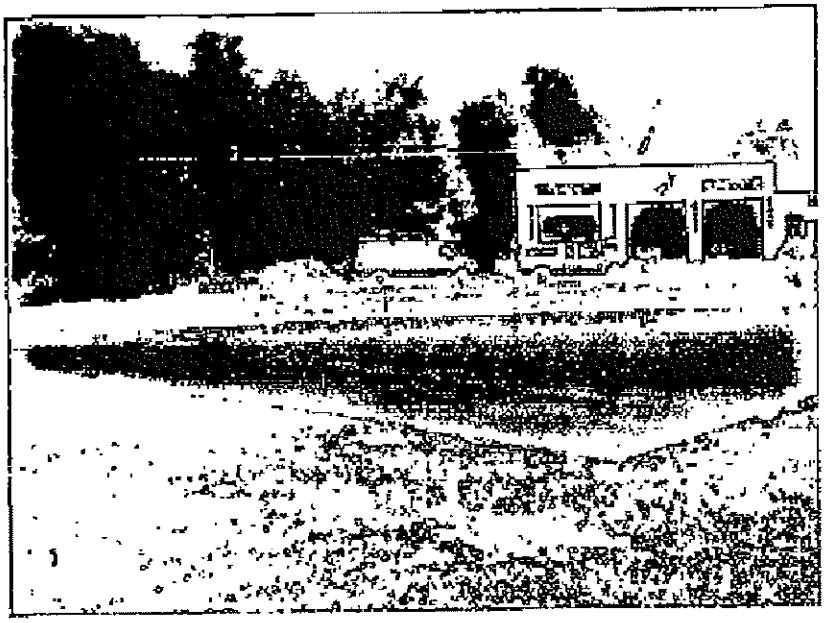
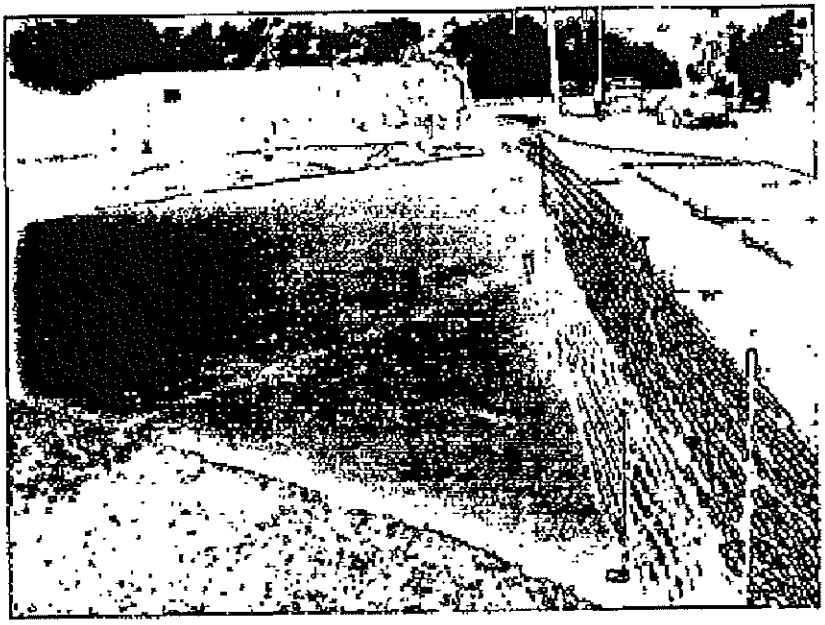
PHOTO #1



NORTHERN ENGINEERED BARRIER (TRIANGLE PAD)

PHOTO #2



NORTHERN ENGINEERED BARRIER (TRIANGLE PAD)

PHOTO # 3

EASTERN ASPHALT ENGINEERED BARRIER (RECTANGLE PAD)

PHOTO # 4

PROPERTY WITH BOTH ASPHALT BLACKTOP PADS

APPENDIX F
PROFESSIONAL ENGINEER CERTIFICATION

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This page can be completed online.

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 5/17). Failure to furnish this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, application, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Professional Engineer Certification

A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale/Ogden)

Site Address (not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

B. Certification

The release from the underground storage tank system(s) identified by the above-referenced incident number at the above-referenced site has been remediated in accordance with 35 Ill. Adm. Code, Part [ ] 731, [x] 732 or [ ] 415 ILCS 5/57-57.17 (includes Public Act 92-0554) and other applicable rules and regulations. The remedial activities are described in the Corrective Action Completion Report dated 7/29/99 and 9/19/03. The remediation has achieved the objectives set forth by the Agency in:

RECEIVED
FEB 20 2004
IEPA/BOL

35 Ill. Adm. Code Part 742 X

Site Specific Cleanup Objectives approved by the Agency in the letter dated _____ ____

I certify under penalty of law that the Corrective Action Completion Report, supporting documents and all attachments were prepared under my direction or supervision or were reviewed by me. To the best of my knowledge and belief, the attached Corrective Action Completion Report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of the fine and imprisonment for knowing violations.

Professional Engineer

Name: Richard J. Vamos

Firm: DAI Environmental, Inc.

Address: 27834 N Irma Lee Circle

City, State, ZIP: Lake Forest, IL 60045

Phone: 847-573-6900

Ill. Registration No.: 062-049138

License Expiration Date: 11/20/05

Signature: [signature]

Date: 2-18-04

P.E. Seal

RICHARD J. VAMOS
062-049138
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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APPENDIX G
OWNER/OPERATOR SUMMARY PAGE

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Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Owner/Operator Property Summary

A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale Odgen)

Site Address (Not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

LUST Technical File

Engineered barriers, institutional controls and other use restrictions, if any, proposed for this site may not be implemented without approval by the title holder(s) of record for the above-referenced property, or the agent(s) of such person(s). These controls and restrictions will be identified in the No Further Remediation letter, which must be recorded in the chain of title for the property. Failure to maintain these controls is grounds for voidance of the NFR letter.

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B. Proposed Institutional Controls and Use Restrictions

The following controls and restrictions are proposed for the above referenced site:

- [x] Industrial/Commercial land use limitation;
- [ ] On-site groundwater restriction prohibiting the use of groundwater beneath the site as a potable water supply;
- [x] An engineered barrier: ☐ building, ☒ asphalt/concrete, or ☐ other *(description)* _____;
- [x] Groundwater use restriction ordinance: ☐ with a MOU, ☒ without a MOU;
- [ ] Construction Worker caution notification;
- [x] Other: Highway Authority Agreement
- [ ] None (there are no proposed institutional controls, etc.)

C. Identification of Property Ownership

Indicate which statement below is applicable to this site.

- [x] The title holder of record for the property identified in Section A above is the owner and/or operator of the underground storage tank(s) (complete paragraphs D and F).

☐ The title holder of record for the property identified in Section A above is not the underground storage tank owner or operator (complete paragraphs E and F).

D. Underground Storage Tank Owner/Operator Declaration

I hereby propose to place the restriction(s) and/or institutional controls identified in Section B above on the property identified in Section A above. I certify that I am the owner and/or operator of the underground storage tank(s) that are or were located at the above referenced property and that I am the title holder of record for the property or the agent of such title holder of record. If the title holder of record is not a natural person, I further certify that, as agent, I have the authority to approve the placement of the proposed institutional controls and restriction(s) on the property.

Name of Property Owner: Material Service Corp
Name of Officer or Agent: Gary O'Toole
Mailing Address: 4226 South Lawndale Avenue
City, State, ZIP Code: Lyons, IL 60534-1199
Signature: Gary W O'Toole Date: 2-11-04

E. Property Ownership Declaration

I hereby certify that I have reviewed the attached report and that I accept the terms and conditions set forth therein, including any land use limitations, that apply to property I own. I further certify that I have no objection to the recording of a No Further Remediation Letter containing the terms and conditions identified in the Corrective Action Completion Report.

Name of Property Owner: _____
Name of Officer or Agent: _____
Mailing Address: _____
City, State, ZIP Code: _____
Signature: _____ Date: _____

F. Site Description

Real Estate Tax/Parcel Index Number: 18-02-207-004
Legal Description of Site (may be provided on a separate sheet):
See Appendix H for Description

APPENDIX H
FLAT OF SURVEY AND LEGAL DESCRIPTION

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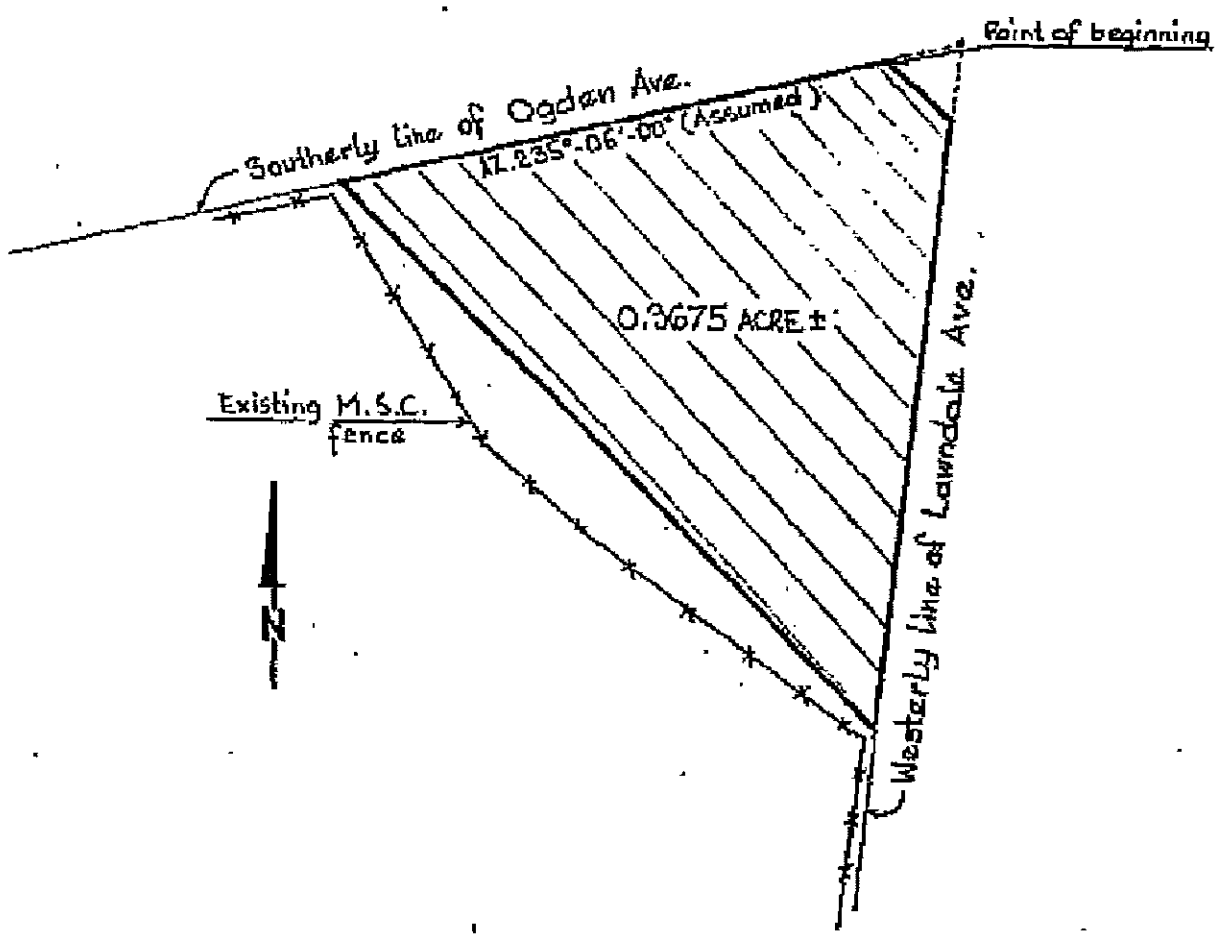
printed 08/20/2007 5:62PM by spe4401 p. 02/02

Date: December 8,1997
Prepared by: L.Musiol

LEGAL DESCRIPTION
of portion M.S.C. parcel code #139

That part of NE quarter of Section 2, Township 38N, Range 12E of the Third Principal Meridian, in Cook County, Illinois bounded and described as follows:

Commencing at the point of intersection of the westerly line of Lawndale Ave. with the southerly line of Ogden Ave., and going westerly with assumed azimuth 235 06'00" for a distance of 20.00 feet to a point of beginning; thence continue with said azimuth 235 06'00" along westerly line of Lawndale Ave. for a distance of 158.44 feet; thence southeasterly with azimuth 110 34'08" for a distance of 220.56 feet; thence northwesterly with azimuth 347 29'59" for a distance of 169.17 feet; thence northwesterly with azimuth 288 22'01" for a dist. of 23.99 feet to a point of beginning, containing 0.3675 acre, more or less.



0311715020-CCOR
Material Service Corp.
Chuck Teck

ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 847.579.6900
Fax 847.579.6953

Polo Park Business Center
27884 N. Irma Lee Circle
Lake Forest, Illinois 60045-5130

February 19, 2004

Mr. Michael Heaton
Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 N. Grand Avenue, East
P.O. Box 19276
Springfield, IL 62794-9276

Re: ***Corrective Action Completion Report Amendment***
LPC # 0311715020 – Cook County
MSC - Yard 18 Lawndale Ogden
4226 South Lawndale Avenue
Lyons, IL 60534-1199
Incident # 951401
LUST Technical File

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Dear Mr. Heaton,

Please find enclosed two copies (one bound, one unbound) of the *Corrective Action Completion Report* (CACR) Amendment for Material Service Corp. - Yard 18 Lawndale Ogden, Incident # 951401. This Incident Number corresponds to the release from 5 gasoline Underground Storage Tanks (USTs) ranging in size from 1,000-gallons to 6,000-gallons. The USTs were excavated and removed from the property at the corner of Lawndale Ave. and Ogden Ave. June 27-28, 1995. One 8000-gallon diesel fuel UST was also removed at this time, which is located at the other end of the quarry and is referred to as the Haffner tank. This diesel fuel tank is included under the 951401 Incident.

This CACR Amendment details only the completion of Corrective Actions at the Lawndale Ogden portion of the Incident Number. Although all parties recognize that a No Further Remediation (NFR) Letter cannot be issued by the IEPA for Incident Number 951401 because of the remaining issues at the Haffner UST, this report is being submitted to seek recognition of completion of the Corrective Action activities at the Ogden/Lawndale Site. Material Service wishes to receive written correspondence from Illinois EPA stating that all work is complete on this property and at such time as Corrective Actions are completed at Haffner, a NFR Letter will be obtainable.

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If you have any questions, please contact me at (847) 573-8900 extension 118.

Sincerely,
DAI Environmental, Inc.

Christopher Cailles

Christopher Cailles, E.I.T.
Project Engineer

Enclosures

cc: Mary Anne Hunter - Material Service Corp (w/enclosure)

DAI ENVIRONMENTAL

Environmental Engineers, Geologists and Scientists

Tel 847.573.8900
Fax 847.573.8963

Polo Park Business Center
27834 N. Irma Lee Circle
Lake Forest, Illinois 60045-5130

CORRECTIVE ACTION COMPLETION REPORT
LPC #0311715020 - COOK COUNTY
MATERIAL SERVICE CORP - YARD 18
LAWNDALE AND OGDEN AVENUES
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS
LUST INCIDENT #951401

February 4, 2004

DAI Project Number: 6213

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Prepared For:
Material Service Corporation
4226 Lawndale Avenue
Lyons, Illinois 60534

Prepared By:
DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, Illinois 60045

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TABLE OF CONTENTS

FIGURES ii
TABLES ii
APPENDICES ii
IEPA LEAKING UNDERGROUND STORAGE TANK PROGRAM FORMS iii

1.0 INTRODUCTION 1

2.0 REPORT HISTORY 2

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT 4
C. COMPLETION INFORMATION 4
C.1. Chronological Narrative 4
C.2. How Correction Activities Remediated Threats 5
C.3. Discussion of Cleanup Objective Determination 6
C.3.1 Soil Ingestion Pathway 6
C.3.2 Soil Inhalation Pathway 6
C.3.3 Groundwater Ingestion Pathway 7
C.4. Media Sampling and Analytical Procedures 7
C.4.1. Soil Boring Procedures 7
C.4.2. Soil Classification Procedures 8
C.4.3. Headspace Vapor Analysis 8
C.4.4. Analysis of Soil Samples 9
C.4.5. Static Water Level Measurements 10
C.4.6. Rising Head Hydraulic Conductivity Testing 11
C.5. Analytical Results and Cleanup Objectives in Tabular Format 11
C.6. Laboratory Reports 11
C.7. Soil Boring Logs 11
C.8. Monitoring Well Boring Logs 12
C.9. Laboratory Certification 12
C.10. Professional Engineer Certification 12
C.11. Site Maps 12
C.12. Owner/Operatory Summary 12
C.13. Photographs Documenting Corrective Action Activities 12

4.0 SUMMARY 13

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LIST OF FIGURES

Site Location Map ..... Figure 1
Site Area Map ..... Figure 1a
Potentiometric Surface (April 27, 1999) ..... Figure 2
Engineered Barrier Locations ..... Figure 3
Soil Boring and Monitoring Well Locations ..... Figure 4
Locations of Exceedances of Most Stringent Applicable SROs ..... Figure 5
Extent of Contamination and Area Requiring an Engineered Barrier ..... Figure 6
R-26 Parameters and Groundwater Flow Direction ..... Figure A-1

LIST OF TABLES

Summary of Prior Chemical Analysis of Soil Samples for BTEX and PNAs ..... Table 1
Summary of Chemical Analysis of Soil Samples for BTEX and PNAs ..... Table 2
Summary of Soil Sample Analysis Results for Miscellaneous Parameters ..... Table 3
Summary of Groundwater Sampling Analysis Results ..... Table 4
Summary of Tier 1 SRO Exceedances in Vadose Zone Soils ..... Table 5
Tier 1 SRO Exceedances for the Ingestion and Inhalation Exposure Pathways ..... Table 6
Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils and Soil Saturation Limit ..... Table 7
Tier 2 SROs and Maximum Observed Contaminant Concentrations ..... Table 8
Distance Required for COC's to Attenuate vs Distance Across Ogden Avenue ..... Table 9
Summary of Estimated Hydraulic Conductivities ..... Table 10
Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils and Soil Saturation Limit ..... Table C-1

LIST OF APPENDICES

REVISED FATE AND TRANSPORT MODELING ..... APPENDIX A
HIGHWAY AUTHORITY AGREEMENT ..... APPENDIX B
PATHWAY EXCLUSION DEMONSTRATION ..... APPENDIX C
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION ..... APPENDIX D
GROUNDWATER INGESTION
PHOTOGRAPHS ..... APPENDIX E
PROFESSIONAL ENGINEER CERTIFICATION ..... APPENDIX F
OWNER/OPERATOR SUMMARY PAGE ..... APPENDIX G
PLAT OF SURVEY AND LEGAL DESCRIPTION ..... APPENDIX H

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Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Corrective Action Completion Report

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A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale/Ogden)

Site Address (not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

B. Site Information

1. Is this an amended report? Yes ✓ No ____
2. Has a Corrective Action Plan been approved? Yes ✓ No ____
   Date of approval letter: July 25, 2002
3. This completion report is being submitted pursuant to:
   a. 35 Ill. Adm. Code 731.166 ____
   b. 35 Ill. Adm. Code 732.300(b) ____
   c. 35 Ill. Adm. Code 732.409(a) ✓
   d. 415 ILCS 5/57-57.17 (includes Public Act 92-0554) ____
4. Method of remediation chosen:
   a. Soil excavation and institutional controls
   b. Groundwater Institutional controls
5. Quantity of contaminated media remediated/recovered:
   a. Soil 330 yds.^{3}
   b. Groundwater 0 gals.
   c. Free Product 0 gals.

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C. Completion Information

Provide the following:

1. A chronological narrative of corrective action activities;
2. An explanation of how the corrective action activities remediated the release;
3. A discussion of how the remediation objectives were determined;
4. Media sampling and analytical procedures to verify completion of remediation;
5. The analytical results and remediation objectives in tabular format;
6. Laboratory reports;
7. Soil boring logs;
8. Monitoring well logs;
9. Laboratory Certification;
10. Applicable Professional Engineer Certification;
11. Site maps to scale and oriented north showing the:

    a. Final soil sample locations demonstrating completion of remediation;
    b. Groundwater monitoring well locations;
    c. Groundwater recovery/discharge points;
    d. Plume of contamination as defined by laboratory analyses; and
    e. Area remediated.

12. Owner/Operator Summary; and
13. Photographs documenting corrective action activities.

D. Signatures

I certify under penalty of law that this report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, this report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner

Company/Name: Material Service Corp

Owner Contact: Gary O'Toole

Address: 4226 South Lawndale Ave

City, State, ZIP: Lyons, IL 60534-1199

Phone: 312-443-7104

Signature: Gary W. O'Toole

Date: 2-11-04

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Operator (if different than UST Owner)

Name: Same as Owner

Title:

Address:

City, State, ZIP:

Phone:

Signature:

Date:

Consultant

Firm: DAI Environmental, Inc.

Contact: F. Thomas DePaul

Title: President

Address: 27834 N. Irma Lee Circle

City, State, ZIP: Lake Forest, IL 60045

Phone: 847-573-8900

Signature:

Date:

CORRECTIVE ACTION COMPLETION REPORT
LPC #0311715020 - COOK COUNTY
MATERIAL SERVICE CORP - YARD 18
LAWNDALE AND OGDEN AVENUES
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS
LUST INCIDENT #951401

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1.0 INTRODUCTION

This document is an attachment to the *Corrective Action Completion Report* (CACR) prepared by DAI Environmental, Inc. (DAI) and submitted to the Illinois Environmental Protection Agency (IEPA) on behalf of Material Service Corp. (MSC) - Yard 18 Ogden/Lawndale, regarding Illinois Emergency Management Agency (IEMA) Incident Number 951401. The site is located at the intersection of Lawndale Avenue and Odgen Avenue, but is addressed to MSC at 4226 South Lawndale Ave in Lyons, Illinois (See Figure 1 for a Site Location Map and Figure 1a for an Area Map). This attachment provides the information required under Section C of the CACR forms. All other information is included directly on the above-referenced report forms.

This document has been prepared to assist in the review of the CACR by following the organizational format of the IEPA Leaking Underground Storage Tank (LUST) Program forms. Each section of this document is headed by one of the question statements in the forms, set in ***Bold Italics***, and keyed to its respective section. Please note that this report has been prepared to discuss the Yard 18 Ogden/Lawndale portion of Incident Number 951401 only. The "Haffner" tank, which has the same Incident Number but is situated on the opposite side of the rock quarry will be addressed in a separate report.

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2.0 REPORT HISTORY

On June 27, 1995, five (5) underground storage tanks (USTs) were removed from the Ogden and Lawndale location in the presence of a representative from the Lyons Fire Department. During the removal activities at the Ogden and Lawndale location (Site), it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. IEMA was immediately notified of the suspected release, and Incident Number 951401 was assigned. A Corrective Action Completion Report, dated March 10, 1998, summarizing the UST removal activities and the results of a March 1995 Phase II investigation was submitted to the IEPA. Based upon the information contained in that report, a "No Further Remediation" (NFR) Letter was requested from IEPA. In a letter dated April 9, 1998, IEPA disapproved the request on the basis that the extent of soil and groundwater contamination had not been fully investigated/delineated. A Site Classification Work Plan and Budget, dated August 3, 1998, was submitted for agency approval to comply with IEPA's request for further investigation. On December 2, 1998, IEPA approved this work plan pending four (4) modifications.

On July 29, 1999, DAI Environmental, Inc. (DAI) submitted a *Site Classification/Corrective Action Completion Report* (CACR) to IEPA. On January 27, 2000, IEPA issued a letter disapproving the CACR for six (6) specific reasons.

Item 1: *The extent of benzene contaminated soils in excess of Tier I remediation objectives was not defined beyond the property boundary north of SB-9. The extent must be defined...*

Item 2: *The report indicated only gasoline is the material that was released at the Ogden and Lawndale site. Therefore, the only indicator contaminants required to be addressed are benzene, ethylbenzene, toluene, and xylenes ("BTEX")...*

Item 3: *As a result of item 2 above, the areas to be covered by an engineered barrier need to be re-evaluated. It appears the area in the vicinity of SB-6 located along the eastern edge of the property adjacent to Lawndale Avenue will not require an engineered barrier. Additionally...*

Item 4: *The Illinois EPA disapproves of the input parameters used to perform Equation R26. Specifically, there was no demonstration made to determine how far the contamination plume will*

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extend onto off-site properties...Since no information was provided for the groundwater mixing zone thickness, the default value of 200 centimeters should have been used for "S_d"...

Item 5: *The Illinois EPA will determine if the groundwater ordinance for the Village of Lyons will satisfy the requirements necessary to be used as an acceptable institutional control....*

Item 6: *The Illinois EPA has not received a High Priority Corrective Action Plan and associated budget. This information may be submitted separately or concurrently with the High Priority Corrective Action Completion Report.*

In response to these comments, DAI wrote and submitted a High Priority CAP and Budget to IEPA. The CAP, dated March 7, 2002, was approved in an IEPA response letter dated July 25, 2002. Note that with respect to Item 2 above (addressed in the CAP), BTEX and PNAs are contaminants of concern due to the use of the USTS for gasoline and diesel fuel. In the July 25, 2002 CAP approval letter, IEPA included five (5) comments. These five (5) comments are restated below with DAI's individual responses to each of them, if applicable:

Item 1: *A revised Corrective Action Completion Report...should contain the following information: (a) the revised R26 calculations demonstrating that contaminated groundwater does not extend across Ogden or Lawndale Avenues (as referenced in the subject submittal); (b) Groundwater flow diagrams; (c) Highway Authority Agreements with the appropriate entity for Ogden and Lawndale Avenues; and (d) a demonstration that an asphalt cover (the proposed engineered barrier) has been placed over the areas depicted in Figure 9 of the July 29, 1999 report.*

> The revised R26 calculation is provided in Appendix A. As shown in Figure 2, the potentiometric surface map, the groundwater flow direction at the Site is to the west. Therefore, the groundwater contamination and soil contamination leaching to groundwater will not extend past Lawndale Ave (located east of the Site). Additionally, the revised R26 equations demonstrate that the groundwater lead concentration of 0.016 mg/L will attenuate to 0.0006 mg/L by the west side of Ogden Ave, significantly less than the Tier 1 Class I Groundwater Remediation Objective (GRO) of 0.0075 mg/L. The R26 and R12 calculations demonstrate that benzene, ethylbenzene, and PNA soil contamination leaching to groundwater will also attenuate long before crossing Ogden Ave. DAI has included in Appendix B a copy of the Highway Authority Agreement with The Illinois Department of Transportation (IDOT) allowing for the groundwater (as well as soil) contamination under Ogden and Lawndale Avenues to remain in place. Finally, Figure 3 shows the location of the engineered barrier on site and Appendix E provides photographic documentation of the barrier in-place.

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Item 2: *No additional soil or groundwater samples should be collected at this time.*

No additional soil or groundwater samples were collected.

Item 3: *Illinois EPA is satisfied that soil contamination does not migrate across Ogden and Lawndale Avenue, though a Highway Authority Agreement developed in accordance with 35 IAC 742.1020 with the highway authority (authorities) over these roadways should still be developed for Illinois EPA review and approval.*

As stated above, DAI has included in Appendix B a copy of the Highway Authority Agreement with IDOT allowing for the groundwater (as well as soil) contamination under Ogden and Lawndale Avenues to remain in place.

Item 4: *The groundwater ordinance enacted by the Village of Lyons has been approved by Illinois EPA for use as an institutional control to address the groundwater ingestion exposure route.*

MSC will be relying upon the IEPA approved groundwater use prohibition ordinance enacted by the Village of Lyons.

Item 5: *It does not appear as though the lead is a contaminant of concern. In addition, it does not appear as though the lead detected at location SB-14 is the result of a release from the underground storage tank.*

DAI and MSC agree that lead is not a contaminant of concern.

3.0 ATTACHMENT TO CORRECTIVE ACTION COMPLETION REPORT

C. COMPLETION INFORMATION

C.1. Chronological Narrative

On June 27-28, 1995, five (5) USTs were removed from the property located at the corner of Lawndale Avenue and Ogden Avenue in Lyons, Illinois, in the presence of a representative from the Lyons Fire Department. During the removal activities, it was noted that the excavated area exhibited olfactory and visual evidence of petroleum contamination. The IEMA was immediately notified of the suspected release, and the IEMA Incident Number 951401 was assigned. Specific details regarding the UST and associated piping removal activities and soil excavation and disposal were submitted to the agency in the 45-Day Report, dated March 25, 1996. In addition to the five (5)

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USTs removed at the corner, one (1) UST, which is part of the 951401 Incident Number was removed from the opposite side of the rock quarry. This tank is referred to as the "Haffner" UST. This CACR addresses activities at the Ogden/Lawndale portion only.

During a Phase II Site Assessment, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11), on March 14, 1995. Pursuant to the IEPA approved work plan, fifteen (15) soil borings (SB-1 through SB-15) were drilled under the supervision of DAI. On February 1, 1999, soil samples were collected from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected from borings SB-10 through SB-15. Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. Both soil and groundwater samples were submitted to an independent analytical laboratory for chemical and physical analysis.

In the CACR denial letter dated January 27, 2000, the IEPA noted that the extent of benzene contamination had not been properly delineated. To address this request, DAI petitioned IDOT (the governmental agency responsible for maintenance of the adjacent right-of-ways at Ogden and Lawndale Avenues) for permission to install soil borings in the street. On July 2, 2001, after receiving permission from IDOT, DAI installed four (4) soil borings, two (2) soil borings each in Lawndale Ave (B-16 and B-17) and Ogden Ave (B-18 and B-19). The four (4) soil borings were installed until bedrock was encountered at depths ranging from 9 to 10.5-ft below ground surface (bgs). See Figure 4 for the locations of all of the soil borings and monitoring wells.

C.2. How Corrective Activities Remediated Threats

As part of the UST removal activities on June 27, 1995, 330-yd^3 of soil and backfill exhibiting visual and olfactory evidence of petroleum contamination were excavated and disposed of off-site. Further details regarding these activities were previously submitted in the 45-Day Report.

On May 18, 1999, the Village of Lyons passed Ordinance Number 5-18-99-3, "AN ORDINANCE AMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH

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PROHIBITS WELLS FOR POTABLE WATER SUPPLY." In the CAP approval letter dated July 25, 2002, Item 4 states that the groundwater use prohibition ordinance (GUPO) is approved by IEPA. The GUPO has been approved for the entire Village of Lyons without requiring a memorandum of understanding (MOU). This ordinance will be implemented as an institutional control to eliminate the groundwater ingestion exposure pathway. A groundwater ingestion pathway exclusion demonstration is included in Appendix C.

Benzene and PNAs were observed at concentrations in excess of the Tier 1 Soil Remediation Objectives (SROs) for the soil inhalation and ingestion exposure routes at various locations across the site. To ensure that these observed exceedances do not adversely impact human health, a portion of the site was asphalt-paved to eliminate these exposure pathways. The two (2) areas requiring an engineered barrier were covered with asphalt blacktop on August 27, 2003. The Village of Lyons intends to purchase the property from MSC to create a memorial. Proper paperwork and notifications will be made to ensure that prior to future intrusive construction activities, the property owner will ensure that construction workers are notified of the potential health hazards and that the proper industrial hygiene practices are observed. An engineered barrier compliance demonstration is provided in Appendix D and photographs of the engineered barrier are provided in Appendix E.

C.3. Discussion of Cleanup Objective Determination

C.3.1. Soil Ingestion Pathway: The SROs for the soil ingestion pathway were determined from 35 IAC Section 742 Appendix B, Table B: *Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties*. Exceedances were addressed by the installation of an engineered barrier of asphalt pavement.

C.3.2. Soil Inhalation Pathway: The SROs for the soil inhalation pathway were determined from 35 IAC Section 742 Appendix B, Table B: *Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties*. Exceedances were addressed by the installation of an engineered barrier of asphalt pavement.

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C.3.3. Groundwater Ingestion Pathway: The GROs for the groundwater ingestion pathway were initially taken from 35 IAC Section 742 Appendix B, Table E: *Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Pathway.* The SROs for the soil component of groundwater ingestion were first compared to Tier 1 values provided in 35 IAC 742 Appendix B, Table B. Observed exceedances were then compared to Tier 2 concentrations calculated from R12 and R26 modeling equations. See Appendix A for fate and transport modeling. Tables 8 lists the Tier 2 GRO values used and Table 9 gives the modeled distance to attenuation. The groundwater ingestion pathway is eliminated because the Village of Lyons has in place an ordinance prohibiting the use of groundwater as a potable water supply. Based upon the ordinance, the point of human exposure is moved to the village property line. See Appendix C for a formal demonstration for exclusion of the groundwater ingestion pathway.

C.4. Media Sampling and Analytical Procedures

The sampling and analytical procedures of DAI's investigation are detailed in the following sections.

C.4.1. Soil Boring Procedures

During a Phase II Site Investigation, soil samples were collected from the property at nine (9) locations (B-1, B-2, B-4 through B-7, and B-9 through B-11) on March 14, 1995.

Fifteen (15) soil borings (SB-1 through SB-15) were drilled by Midwest Engineering Services of Orland Park, Illinois, using a truck-mounted drilling rig equipped with 4¼-inch internal diameter hollow stem augers. These soil borings were installed for the purposes of delineating the extent of BTEX and PNA contamination. On February 1, 1999, soil samples were collected at 0 to 2-ft bgs, 4 to 6-ft bgs, and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-1 through SB-9. On May 6, 1999, soil samples were collected at 1 to 3-ft bgs and 8 to 10-ft bgs using split-spoon sampling techniques from borings SB-10 through SB-15. The four (4) soil borings placed in the adjacent roads (B-16 through B-19) were drilled by Geocon Test Drilling, Inc. of Crescent City, Illinois, using a truck-mounted drilling rig equipped with 4¼-inch internal diameter hollow stem augers. These soil borings were installed for the purposes of delineating the extent of

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BTEX and PNA contamination. On July 2, 2001, two (2) soil samples were collected from two (2) discrete 2-ft sampling intervals from each of the soil borings B16-B19. Generally, the sample intervals were 3 to 5-ft bgs and 5 to 7-ft bgs which correspond to the unsaturated vadose zone soils and the capillary fringe, respectively. The sampling spoon was decontaminated between each sampling event by scrubbing with a non-phosphate detergent followed by rinsing with tap water. All drilling equipment, and the sampling spoons, were decontaminated between soil borings using a high pressure steam cleaner. All drilling and sampling activities were conducted under the supervision of DAI.

Soil borings SB-1, SB-2, SB-4, and SB-5 were converted into monitoring wells MW-1 through MW-4, respectively. The monitoring wells were installed to depths between 7.5-ft and 10-ft bgs and were constructed of 2-inch diameter schedule 40 polyvinyl chloride (PVC) flush-threaded riser with a 5-ft section of 0.010-inch factory slotted PVC screen. The filter pack, consisting of an artificially introduced sand pack, was extended to 1-ft above the top of the screen. A layer of bentonite, at least 1-ft thick, was used to seal each well, and the remainder of the annular space was grouted with a mixture of cement and bentonite. Locking steel flush-mounted vaults were installed to secure and protect each well. All groundwater monitoring wells were installed by MES under the supervision of DAI.

C.4.2. Soil Classification Procedures

Soil samples were examined for overburden classification as well as for visual evidence of contamination. Soil type, consistency, and the thickness and depth of the units were used to develop soil boring logs and to define the site stratigraphy. The Unified Soil Classification System was used to classify the soil type. Copies of the soil boring logs developed by DAI were provided in Appendix G of the SCCR/CACR and Appendix A of the CAP.

C.4.3. Headspace Vapor Analysis

Headspace vapor measurements were taken in the field to estimate the VOC content of soil samples using a Photovac MicroTip® photoionization detector (PID). The PID was calibrated with a

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100-ppmv/v isobutylene-in-air commercial grade gas standard. The headspace samples were prepared by filling a clean 8-ounce jar approximately half full with soil collected from the sample interval. The jar was then covered with aluminum foil, sealed with the lid and allowed to equilibrate at ambient temperature and out of direct sunlight for at least 15-minutes. The sample headspace was screened for VOCs by inserting the PID probe through the aluminum foil approximately 1-inch into the sample jar.

C.4.4. Analysis of Soil Samples

The soil samples from the Phase II Site Investigation were submitted for laboratory analysis of BTEX via USEPA SW-846 Method 8020 and PNAs via USEPA SW-846 Method 8310. Table 1 in the Tables Section summarizes the Phase II sampling results. All laboratory reports were submitted in previous reports to IEPA.

The soil samples collected from SB-1 through SB-9 were submitted for chemical analysis of VOCs, PNAs, and TCLP Lead via USEPA Methods SW8260B/5035, SW8310, and SW1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of VOCs were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035. Samples were also collected from these borings for the analysis of the landfill parameters Flash Point, Paint Filter, and pH via ASTM Method D492, USEPA Method 9095, and USEPA Method 9040/9041, respectively. Additionally, samples were collected for the analysis of the physical parameters Moisture Content, Ash Content, and Organic Matter Content via ASTM Method D2974 A&C. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory.

The soil samples collected from SB-10 through SB-15 were submitted for chemical analysis of BTEX, PNAs, Total Lead, and TCLP Lead via USEPA Methods SW8021B/5035, SW8310, SW6010B, and 1311/6010B, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of BTEX were field preserved in methanol and/or sodium bisulfate pursuant to SW-846 USEPA Method 5035. Samples were stored on ice immediately after

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collection pending transport to an independent analytical laboratory. Table 2 summarizes the BTEX and PNA results, while Table 3 summarizes the lead and soil characteristics. Both tables are provided in the Tables Section.

The soil samples collected from B-16 through B-19 were submitted for analysis of BTEX and PNAs via SW-846 USEPA Methods 8260B and 8270C, respectively. To minimize the loss of VOCs at the time of collection, the samples submitted for analysis of BTEX were field preserved pursuant to SW-846 USEPA Method 5035. Samples were stored on ice immediately after collection pending transport to an independent analytical laboratory. The results of the final round of sampling are available in Table 2 in the Tables Section.

C.4.5. Static Water Level Measurements

Static water level measurements were collected from MW-1 and MW-4. MW-2 failed to produce water and MW-3 has periodically contained water following substantial rainfalls. All water levels were measured using an electronic water level indicator capable of detecting water depth with an accuracy of ±0.01-ft. The elevation of the top of the well casing was surveyed and the water level data was referenced to an assumed on site datum elevation of 100.00-ft. On April 27, 1999, static water levels were measured in MW-1, MW-3, and MW-4. The elevations of the groundwater in each well was calculated using the surveyed datum elevations and the depth to groundwater measurements. The static water level at MW-1 was 5.40-ft bgs, 9.81-ft bgs at MW-3 and 6.25-ft bgs at MW-4. The potentiometric surface generated for the uppermost water-bearing unit using this data is presented in Figure 3. As can be seen from this figure the groundwater flow direction is west-southwesterly under a hydraulic gradient of 0.022-ft/ft.

All field equipment used to collect water level data was decontaminated prior to and between measurements to eliminate the potential for cross-contamination. Decontamination protocol consisted of an Alconox® soap and water wash and a triple distilled water rinse.

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C.4.6. Rising Head Hydraulic Conductivity Testing

To determine the hydraulic conductivity of the saturated soils, rising head slug tests were conducted on the monitoring wells containing water on February 3, 1999 (MW-1 and MW-4). The slug testing was conducted by removing a "slug" of water from the well and recording the water level changes that result from the instantaneous withdrawal of the slug. The rate of recovery observed in the well is a function of the hydraulic properties of the aquifer, including the hydraulic conductivity which was calculated using the appropriate well-flow equations. Because a slug insertion method forces groundwater to be displaced above the water table and into the unsaturated filter pack of the well and the formation itself and because the overlying material may have different hydraulic properties than the water-bearing zone, it was recommended that the slug tests be conducted by removing water from the wells (i.e. rising head tests). The slug test data was analyzed using Hvorslev's Method, and the results are summarized in Table 10. The highest hydraulic conductivity calculated was 6.5-cm/day. The slug test calculation data was presented in Appendix H of the SCCR/CACR dated July 29, 1999.

C.5. Analytical Results and Cleanup Objectives in Tabular Format

The updated summaries of analytical results compared to applicable SROs and GROs are included in the Tables Section of this report.

C.6. Laboratory Reports

Copies of the analytical laboratory reports were provided in Appendix A and Appendix B of the SCCR/CACR and the CAP, respectively.

C.7. Soil Boring Logs

Copies of the soil boring logs were developed by DAI were provided in Appendix G of the SCCR/CACR and Appendix A of the CAP.

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C.8. Monitoring Logs

Monitoring well logs developed during DAI's investigations were provided in Appendix G of the SCCR/CACR.

C.9. Laboratory Certification

The laboratory certifications for the chemical and physical analysis of soil and groundwater samples were provided in Appendix F of the SCCR/CACR.

C.10. Professional Engineer Certification

The Professional Engineer Certification of the contents of this report is provided in Appendix F.

C.11. Site Maps

Figure 6 is a site map showing the soil sampling and monitoring well locations, extent of contamination above the Tier 1 SROs and GROs, and the location of the engineered barrier.

C.12. Owner/Operator Summary

The property summary page is provided in Appendix G.

C.13. Photographs Documenting Corrective Action Activities

Photographs of the UST removal and soil excavation and disposal were submitted with the 45-Day Report. Photographs of the engineered barrier are included in Appendix E.

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4.0 SUMMARY

On June 28, 1995, five (5) USTs located at the corner of Ogden and Lawndale Avenues were determined to have had a release. Incident Number 951401 was assigned to the release. Several stages of subsurface investigations were performed between 1999 and 2001 to delineate the extent of soil and groundwater contamination. The groundwater ingestion exposure route has been eliminated by the Village of Lyons Ordinance No. 5-18-99-3. Tables 8 and 9 are the results of TACO R12 and R26 modeling which demonstrate that groundwater contamination and residual soil contamination migrating from soil to groundwater will have attenuated to levels below the Tier 1 GROs before encountering the closest downgradient point of human exposure, which is the Village of Lyons municipal boundary. In addition, remaining soil contamination above the Tier 1 SROs for the soil inhalation and ingestion exposure pathways, based upon an industrial/commercial property classification, is covered by an engineered barrier of blacktop asphalt. Based upon the information provided in this report, the Lawndale/Ogden portion of Incident Number 951401 is eligible to received a letter of No Further Remediation.

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FIGURES

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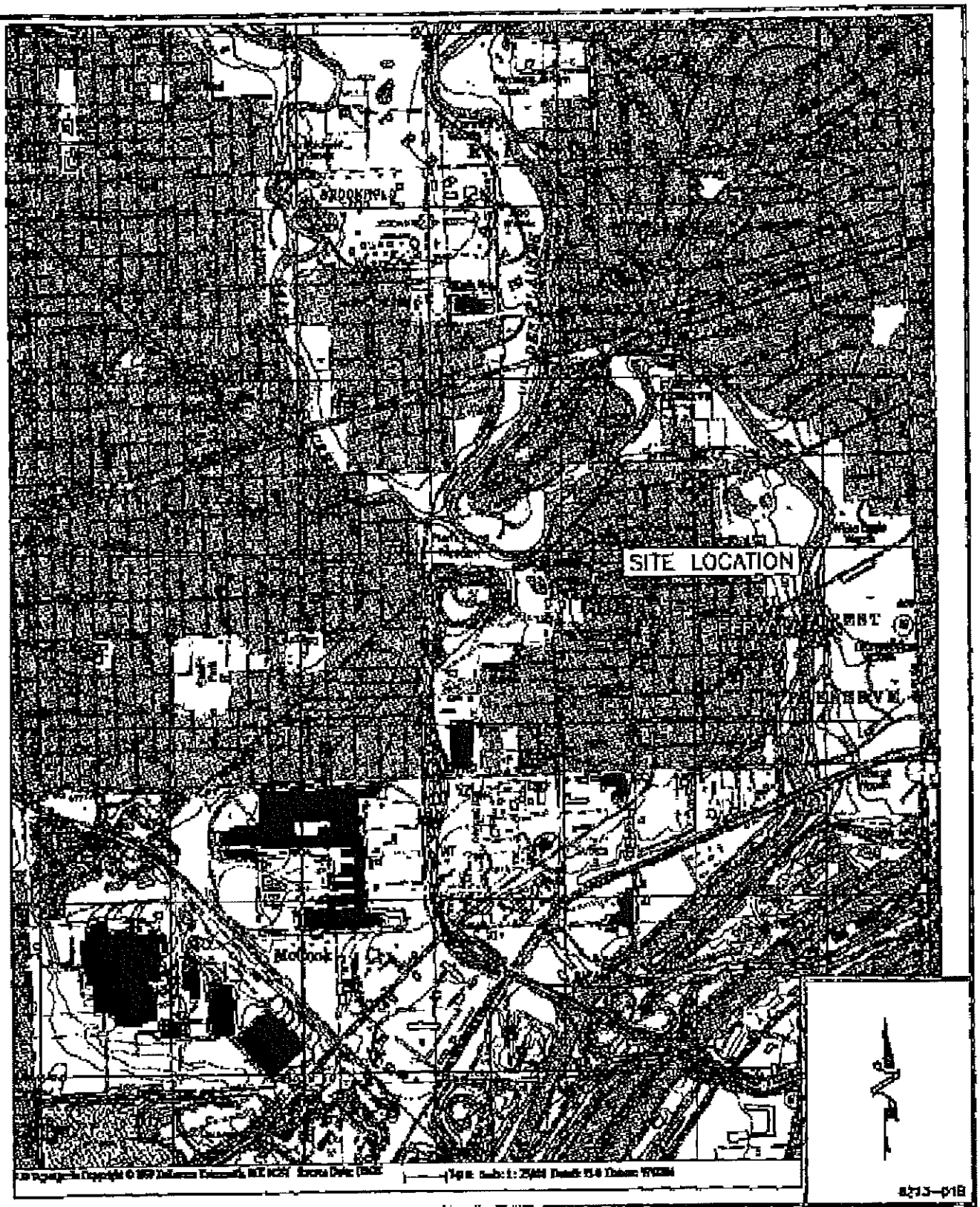
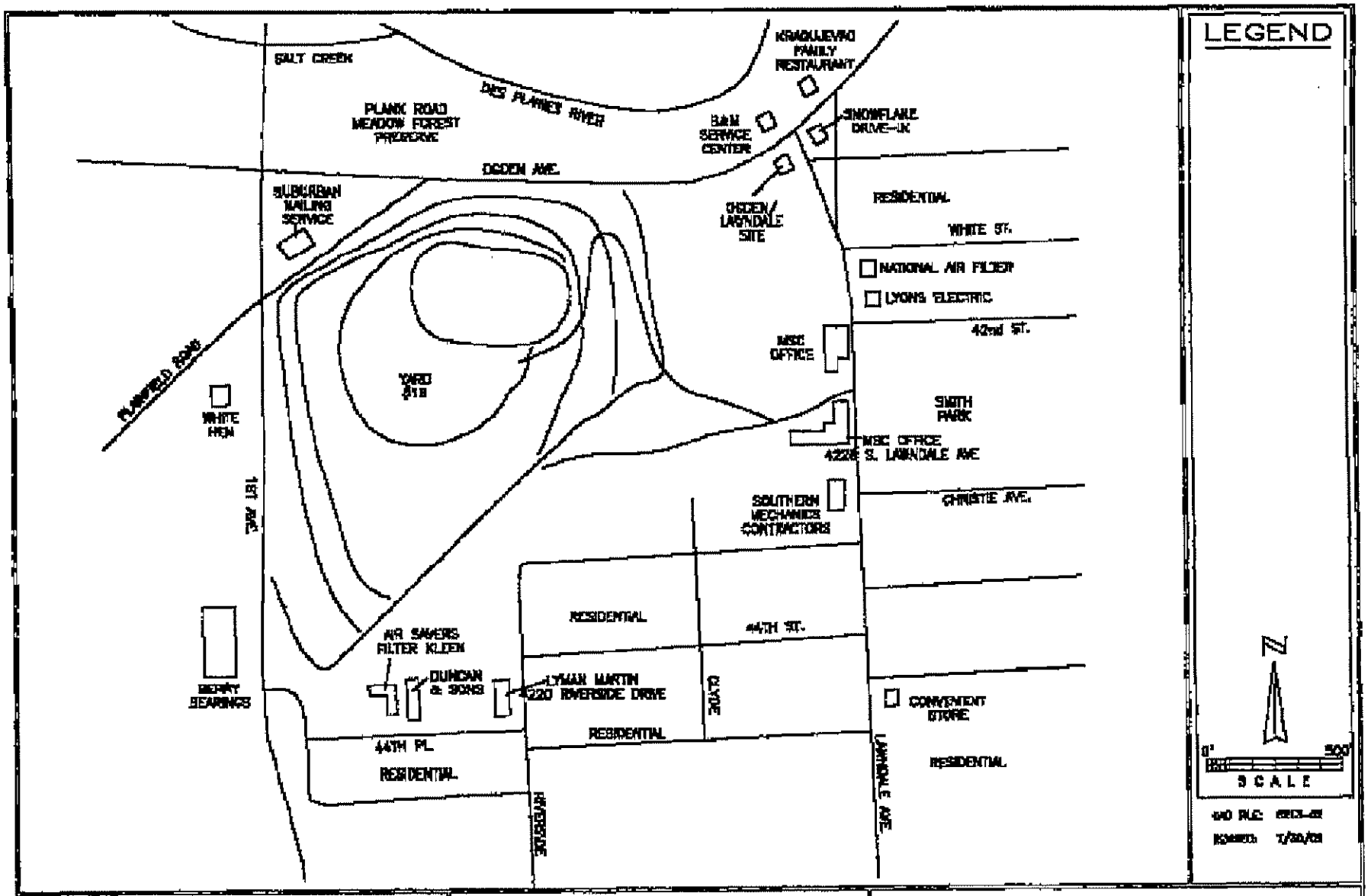


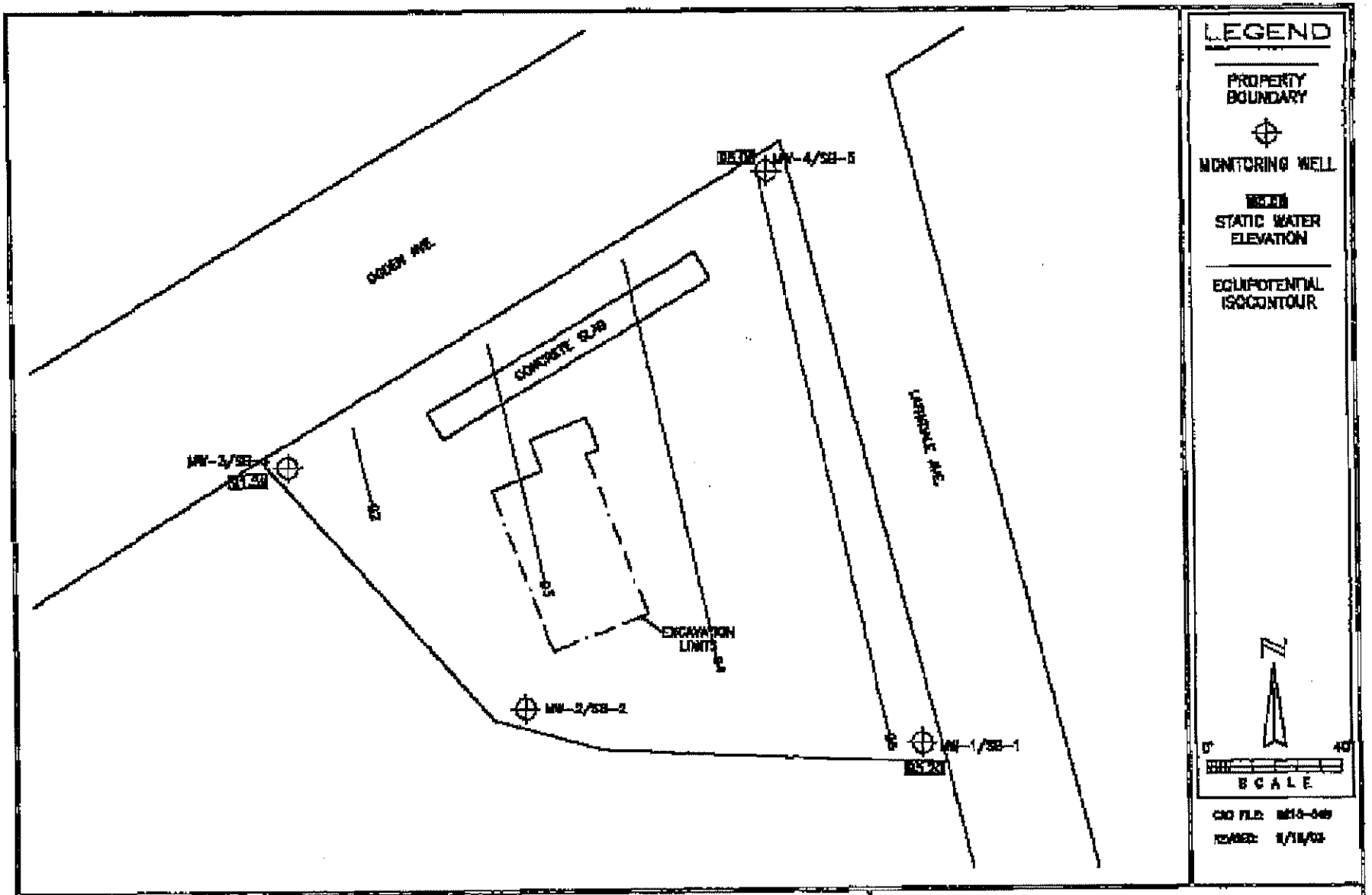
EN DAI AL	MSC – YARD 18 4226 SOUTH LAWNDALE AVENUE LYONS, ILLINOIS	FIGURE 1 SITE LOCATION MAP



ENVIRONMENTAL

MATERIAL SERVICE CORPORATION
4226 SOUTH LAWNDALE AVENUE
LAWNDALE OGDEN
LYONS, ILLINOIS

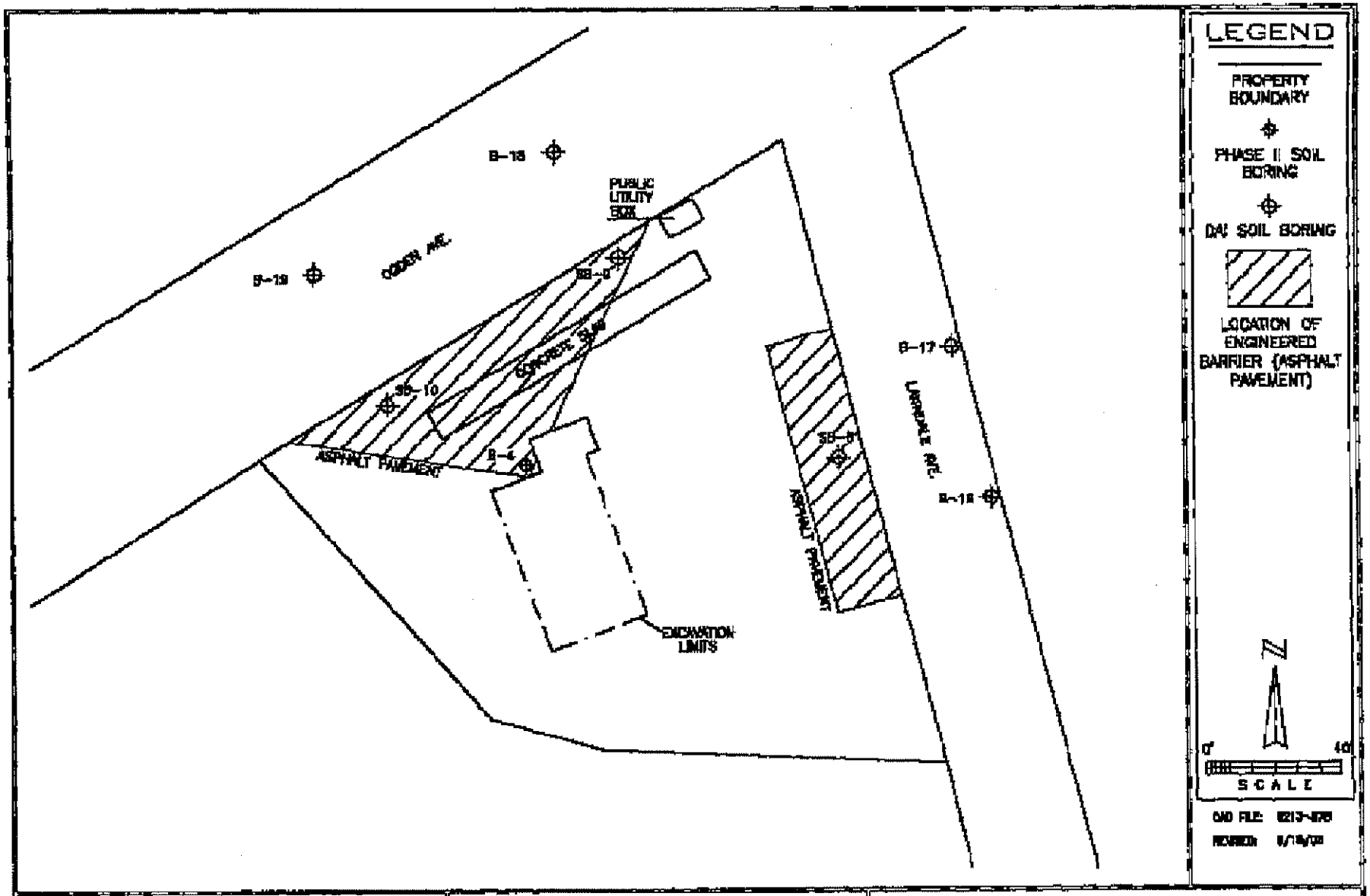
FIGURE 1A
AREA MAP



ENVIRONMENTAL DAI

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

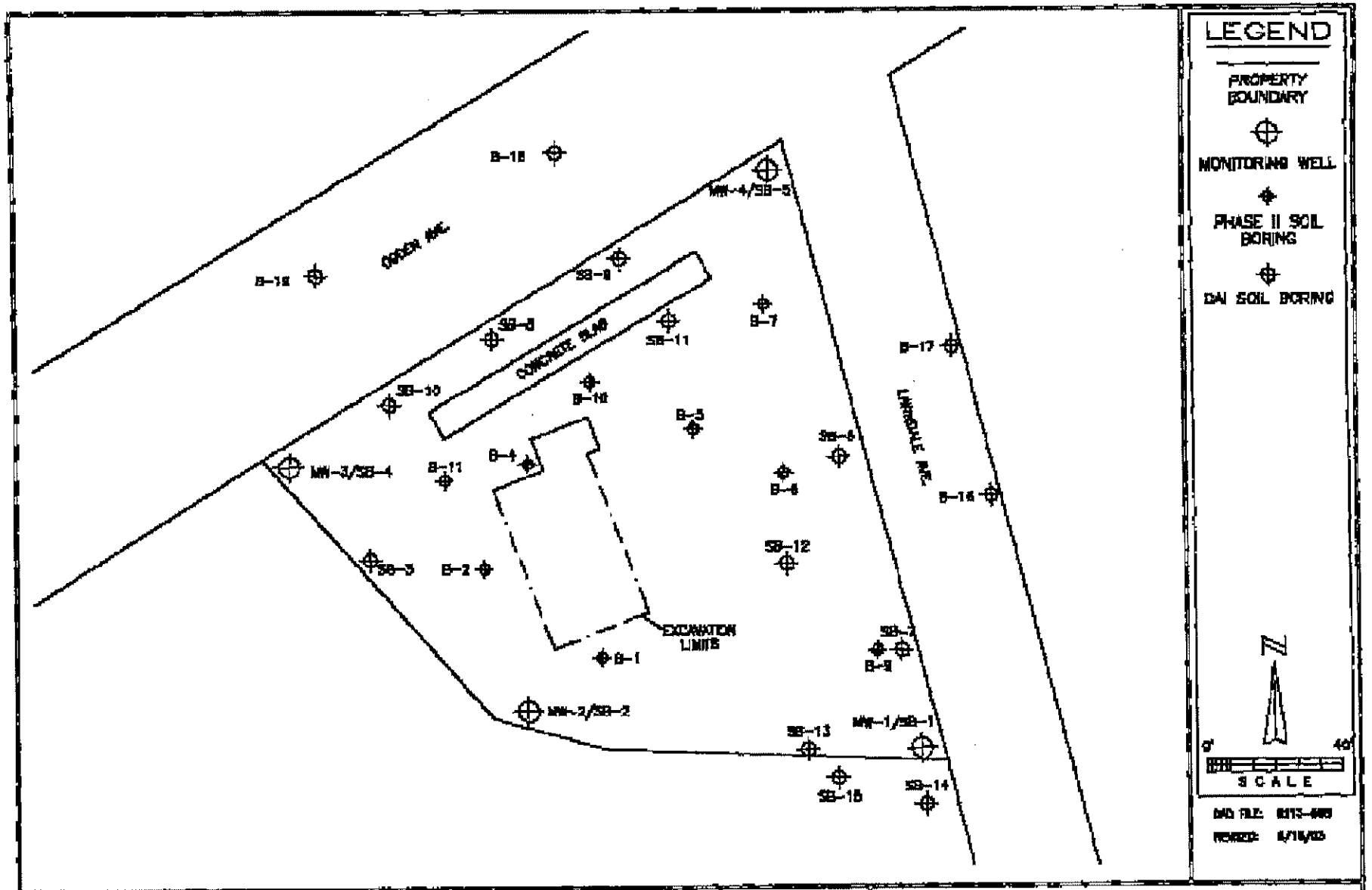
FIGURE 2
POTENTIOMETRIC SURFACE
(APRIL 27, 1999)



ENVIRONMENTAL DAI

MSC YARD 18
4225 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 3
ENGINEERED BARRIER LOCATIONS



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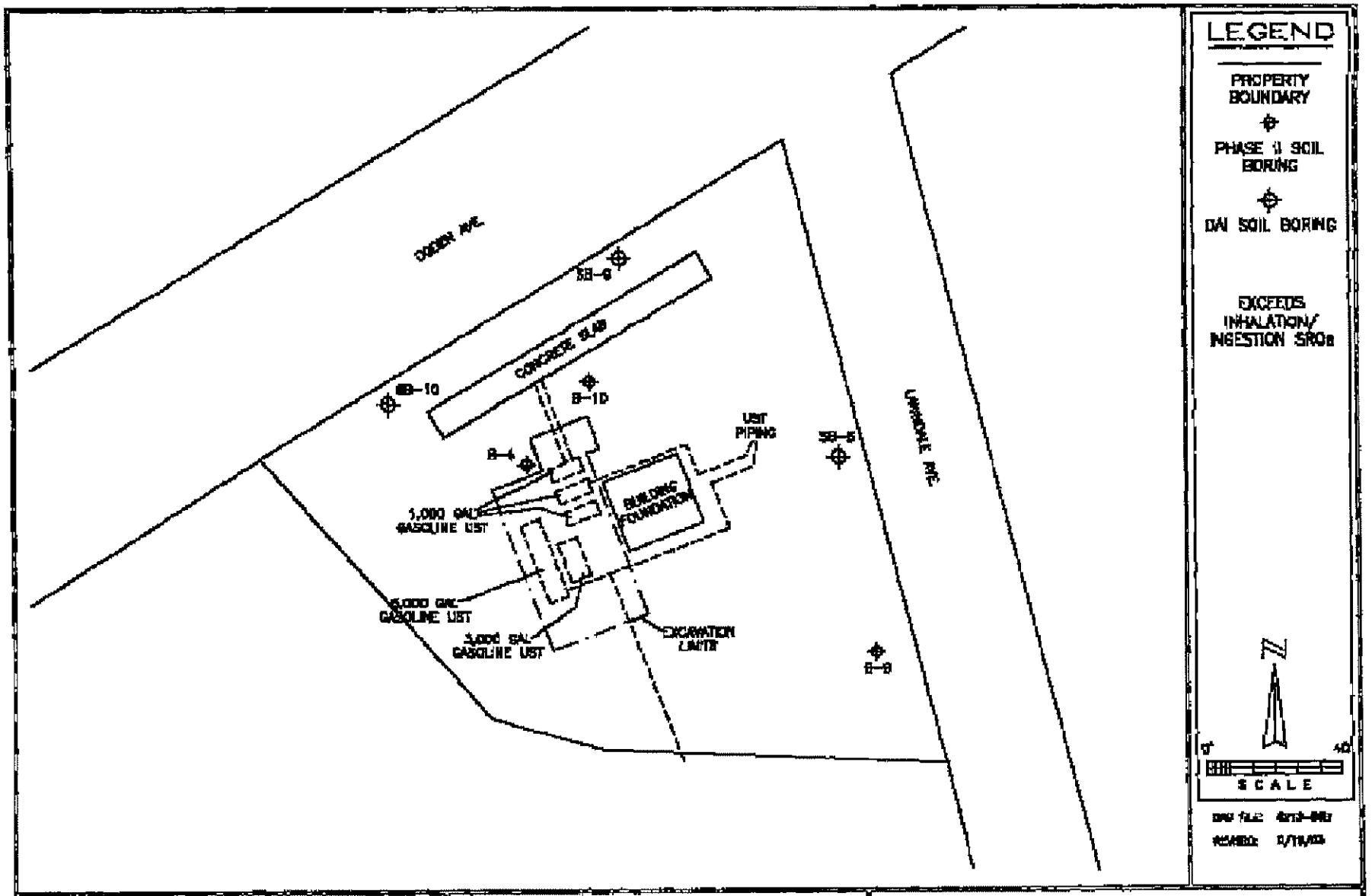
MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

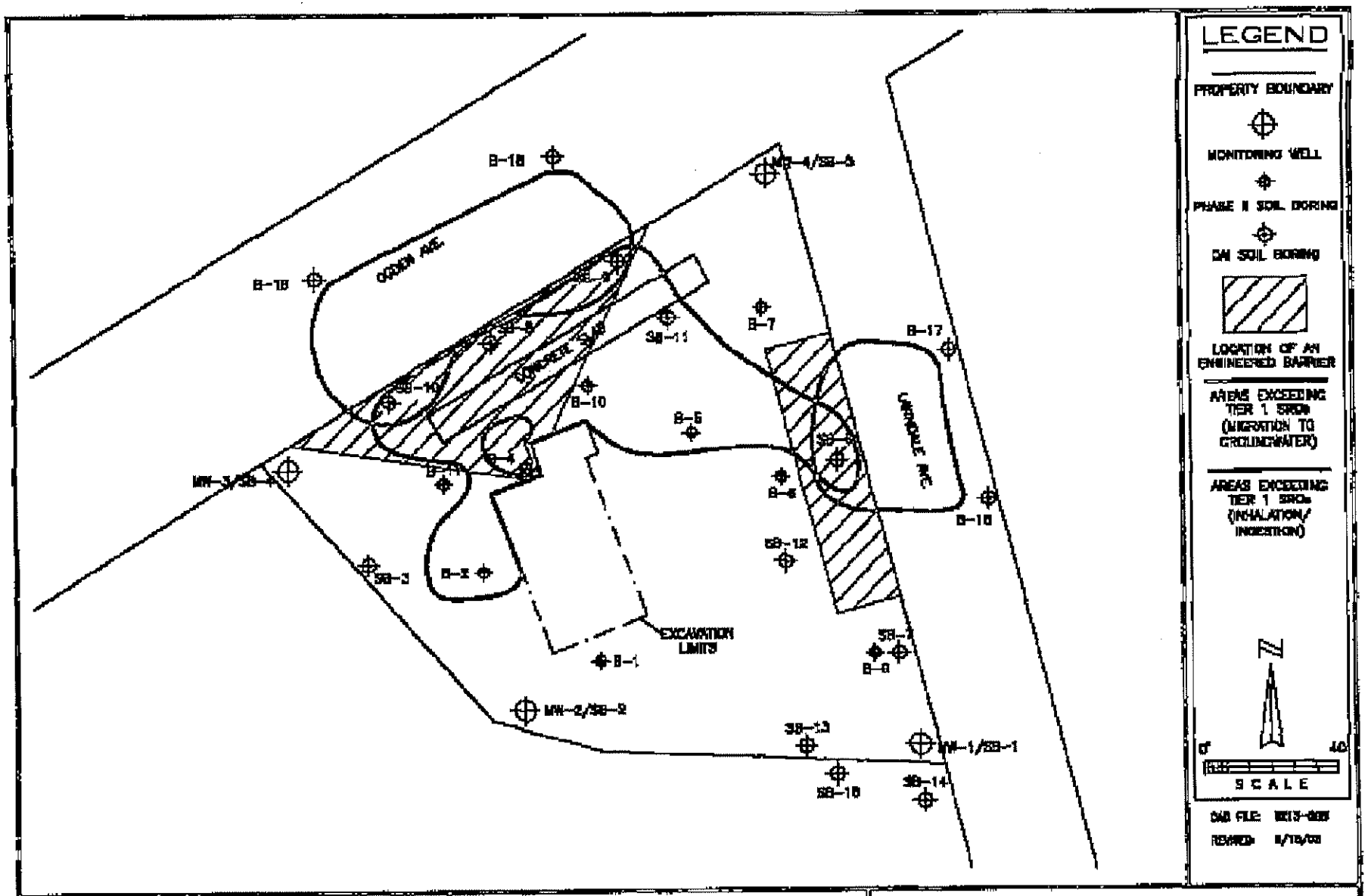
FIGURE 4
SOIL BORING AND
MONITORING WELL LOCATIONS



ENVIRONMENTAL DAI

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 5
LOCATIONS OF EXCEEDANCES OF
MOST STRINGENT APPLICABLE SROS



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MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 6
EXTENT OF CONTAMINATION AND
AREA REQUIRING AN ENGINEERED BARRIER

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TABLES

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Table 1. Summary of Prior Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Component	Sample ID (Sample Depth Interval in Feet bgs)									Tier 1 SRO[1]
	B-1 (4-4.5)	B-2 (8.7-9.1)	B-4 (5-6.7)	B-5B (7.5-8.0)	B-6 (6-6.4)	B-7 (5.3-6.5)	B-9 (4.5-5.2)	B-10 (5.7-7.4)	B-11 (6.1-7.0)	
Acenaphthene	<0.660	1.130	0.980	2.200	<0.660	<0.660	<0.660	<0.660	<0.660	570
Acenaphthylene	<0.660	2.840	2.450	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	NL
Anthracene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	12,000
Benzo(a)anthracene	0.0302	<0.00871	<0.00871	<0.00871	0.015	<0.00871	0.213	<0.00871	<0.00871	2
Benzo(a)pyrene	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	<0.0154	0.434	<0.0154	<0.0154	0.8
Benzo(b)fluoranthene	0.0747	0.0381	0.0421	<0.0121	0.0947	<0.0121	0.618	0.0507	<0.0121	5
Benzo(g,h,i)perylene	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	<0.0509	0.479	<0.0509	<0.0509	NL
Benzo(k)fluoranthene	0.0156	<0.0114	<0.0114	<0.0114	0.0327	<0.0114	0.596	<0.0114	<0.0114	49
Chrysene	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.570	<0.100	<0.100	160
Dibenzo(a,h)anthracene	0.0375	<0.0201	0.0370	<0.0201	0.0855	<0.0201	1.[illegible]	<0.0201	<0.0201	0.8
Fluoranthene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	4,300
Fluorene	<0.140	0.644	<0.140	0.244	<0.140	<0.140	0.226	<0.140	<0.140	560
Indeno(1,2,3-cd)pyrene	<0.0288	<0.0288	<0.0288	<0.0288	0.0326	<0.0288	0.491	<0.0288	<0.0288	8.1
Naphthalene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	1.8
Phenanthrene	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	NL
Pyrene	0.274	<0.180	<0.180	<0.180	<0.180	<0.180	1.780	<0.180	<0.180	4,200
Benzene	<0.002	1.300	1.540	<0.200	<0.002	<0.002	<0.002	0.0463	<0.002	0.03[1]
Toluene	0.0047	0.938	3.370	<0.200	<0.002	<0.002	<0.002	<0.002	<0.002	12[1]
Ethylbenzene	0.00218	1.650	3.920	15.100	<0.002	<0.002	0.00518	<0.002	<0.002	13[1]
Xylenes (total)	0.00836	4.120	18.370	37.600	<0.0061	<0.006	0.02352	<0.00892	<0.006	150[1]

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8020 and 8310, respectively

Table 2. Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	[illegible] (0-2)	[illegible] (4-6)	[illegible] (8-10)	[illegible] (0-2)	[illegible] (4-6)	[illegible] (0-2)	[illegible] (4-6)	[illegible] (8-10)	
Acenaphthene	<0.053	<0.047	<0.062	<0.048	<0.048	<0.047	<0.050	<0.063	570
Acenaphthylene	<0.0790	<0.0707	<0.0929	<0.0711	<0.0711	<0.0699	<0.0746	<0.0939	NL
Anthracene	<0.0412	<0.0361	0.356	<0.0370	<0.0370	<0.0364	<0.0389	<0.0489	12,000
Benzo(a)anthracene	0.0821	0.0418	1.47	<0.0030	<0.0030	<0.0029	<0.0031	<0.0039	2
Benzo(a)pyrene	0.143	0.0938	1.62	<0.005	<0.005	<0.004	<0.005	<0.006	0.8
Benzo(b)fluoranthene	0.159	0.0859	1.99	<0.0041	<0.0041	<0.0040	<0.0043	<0.0054	5
Benzo(ghi)perylene	*0.178*	*0.129*	*1.07*	<0.0305	<0.0305	<0.0300	<0.0321	<0.0403	NL
Benzo(k)fluoranthene	0.112	0.0589	1.24	<0.0039	<0.0039	<0.0038	<0.0041	<0.0051	49
Chrysene	0.0758	0.0395	1.04	<0.003	<0.003	<0.003	<0.004	<0.004	160
Dibenzo(a,h)anthracene	0.247	0.188	1.95	<0.007	<0.007	<0.007	<0.007	<0.009	0.8
Fluoranthene	0.112	0.0734	2.62	<0.0313	<0.0313	<0.0308	<0.0330	<0.0414	4,300
Fluorene	<0.0693	<0.0620	<0.0815	<0.0623	<0.0623	<0.0613	<0.0656	<0.0823	560
Indeno(1,2,3-cd)pyrene	0.362	0.642	1.13	<0.0098	<0.0098	<0.0096	<0.0103	<0.0129	8
Naphthalene	<0.032	<0.028	<0.037	<0.028	<0.028	<0.028	<0.030	<0.037	1.8
Phenanthrene	<0.0979	<0.0334	0.693	<0.0339	<0.0339	<0.0334	<0.0357	<0.0448	NL
Pyrene	0.158	0.0791	2.99	<0.0608	<0.0608	<0.0594	<0.0640	<0.0804	4,200
Benzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	0.03
Toluene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	12
Ethylbenzene	<0.0126	<0.0113	<0.0148	<0.0114	<0.0114	<0.0112	<0.0119	<0.0150	13
Xylenes (total)	<0.0126	0.094	<0.0148	<0.0114	0.0527	<0.0112	<0.0119	<0.0150	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Contaminant	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	SB4-1 (0-2)	SB4-2 (4-6)	SB4-3 (8-10)	SB5-1 (0-2)	SB5-2 (4-6)	SB5-3 (8-10)	SB6-1 (0-2)	SB6-2 (4-6)	
Acenaphthene	<0.062	<0.048	<0.049	<0.050	<0.050	<0.049	<0.047	<0.051	570
Acenaphthylene	<0.0923	<0.0719	<0.0730	<0.0751	<0.0744	<0.0736	<0.0697	<0.0759	NL
Anthracene	<0.0481	<0.0374	<0.0380	<0.0391	<0.0388	<0.0384	1.74	2.24	12,000
Benzo(a)anthracene	<0.0038	<0.0030	<0.0030	<0.0031	<0.0031	<0.0031	3.56	4.80	2
Benzo(a)pyrene	<0.006	<0.005	<0.005	<0.005	<0.005	<0.005	2.26	2.71	0.8
Benzo(b)fluoranthene	<0.0053	<0.0041	<0.0042	<0.0043	<0.0043	<0.0042	2.60	3.25	5
Benzo(ghi)perylene	<0.0397	<0.0309	<0.0314	<0.0323	<0.0320	<0.0316	1.25	1.84	NL
Benzo(k)fluoranthene	<0.0050	<0.0039	<0.0040	<0.0041	<0.0040	<0.0040	1.72	2.16	49
Chrysene	<0.004	<0.003	<0.003	<0.004	<0.004	<0.004	2.46	3.18	160
Dibenzo(a,h)anthracene	<0.009	<0.007	<0.007	<0.007	<0.007	<0.007	1.79	2.74	0.8
Fluoranthene	<0.0407	<0.0317	<0.0322	<0.0331	<0.0328	<0.0325	8.80	12.0	4,300
Fluorene	<0.0810	<0.0630	<0.0640	<0.0658	<0.0653	<0.0646	<0.0611	<0.0663	560
Indeno(1,2,3-cd)pyrene	<0.0127	<0.0099	<0.0100	<0.0103	<0.0102	<0.0101	12.50	15.9	8
Naphthalene	<0.037	<0.029	<0.029	<0.030	<0.030	<0.029	<0.028	<0.030	1.8
Phenanthrene	<0.0441	<0.0343	<0.0348	<0.0359	<0.0356	<0.0352	4.58	6.17	NL
Pyrene	<0.0791	<0.0615	<0.0625	<0.0643	<0.0637	<0.0631	8.21	11.1	4,200
Benzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	0.03
Toluene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	12
Ethylbenzene	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	13
Xylenes (total)	<0.0147	<0.0115	<0.0117	<0.0120	<0.0119	<0.0118	<0.0111	<0.0121	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedance of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID/Sample Depth Interval in Feet								Tier 1 SRO[1]
	SB3-1 (0-2)	SB3-2 (4-6)	SB8-1 (0-2)	SB8-2 (4-6)	SB8-3 (8-10)	SB9-1 (0-2)	SB9-2 (4-6)	SB9-3 (8-10)	
Acenaphthene	<0.054	<0.048	<0.047	<0.051	<0.051	0.158	0.646	<0.050	570
Acenaphthylene	<0.0403	<0.0720	<0.0703	<0.0767	<0.0760	0.281	0.632	<0.0748	NL
Anthracene	0.0449	<0.0375	<0.0366	0.0674	0.206	<0.0378	0.0368	<0.0389	12,000
Benzo(a)anthracene	0.150	0.0552	0.0667	0.202	0.411	0.0209	0.418	0.0514	2
Benzo(a)pyrene	0.154	0.120	0.0056	0.0907	0.275	0.0220	0.246	0.0436	0.8
Benzo(b)fluoranthene	0.160	0.0967	0.0056	0.0968	0.359	0.0174	0.297	0.0836	5
Benzo(ghi)perylene	0.229	0.119	<0.0302	0.0895	0.187	<0.0312	0.423	0.116	NL
Benzo(k)fluoranthene	0.206	0.0690	0.0056	0.0650	0.205	0.0128	0.395	0.0645	49
Chrysene	0.0872	0.0518	0.0067	0.0723	0.312	0.0139	0.141	0.0442	160
Dibenzo(a,h)anthracene	0.323	0.199	<0.007	0.119	0.216	0.0081	1.35	0.143	0.8
Fluoranthene	0.247	0.0771	<0.0510	0.243	0.962	<0.0520	0.786	0.080	4,300
Fluorene	<0.0704	<0.0632	<0.0617	<0.0673	<0.0666	<0.0637	0.445	<0.0656	560
Indeno(1,2,3-cd)pyrene	0.337	0.429	<0.0097	0.567	1.75	0.0360	1.58	0.594	8
Naphthalene	<0.032	<0.029	<0.028	<0.031	<0.030	0.328	0.514	<0.030	1.8
Phenanthrene	0.196	<0.0344	<0.0336	0.126	0.476	<0.0347	0.371	<0.0357	NL
Pyrene	0.295	0.104	<0.0600	0.235	0.915	<0.0622	0.559	0.093	4,200
Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.458	1.510	5.930	0.03
Toluene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.087	0.156	<0.0119	12
Ethyl Benzene	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.287	7.870	1.010	53
Xylenes (total)	<0.0128	<0.0115	<0.0112	<0.0123	<0.0121	0.195	6.640	2.320	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8260B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	SB-10 (1-3)	SB-10 (8-10)	SB-11 (1-3)	SB-11 (8-10)	SB-12 (1-3)	SB-12 (8-10)	SB-13 (1-3)	SB-13 (8-10)	
Acenaphthene	<0.479	<0.050	<0.0681	<0.050	<0.0517	<0.0479	<0.0475	<0.0508	570
Acenaphthylene	<0.714	<0.0745	<0.0895	<0.0745	<0.077	<0.0714	<0.0707	<0.0757	NL
Anthracene	0.563	0.007	<0.0466	0.004	<0.0401	<0.0372	<0.0368	<0.0394	12,000
Benzo(a)anthracene	2.059	0.011	<0.00372	0.009	<0.0033	<0.00296	<0.00294	<0.00315	2
Benzo(a)pyrene	1.572	<0.00476	<0.00572	0.007	<0.0492	<0.00456	<0.00452	<0.00484	0.2
Benzo(b)fluoranthene	1.382	0.009	<0.00515	0.009	<0.00443	<0.0041	<0.00407	<0.00436	5
Benzo(ghi)perylene	1.339	<0.032	<0.0385	<0.032	<0.0331	<0.0307	<0.0304	<0.0325	NL
Benzo(k)fluoranthene	1.002	0.004	<0.00486	0.004	<0.00418	<0.00388	<0.00384	<0.00411	49
Chrysene	2.146	0.007	<0.00429	0.007	<0.00369	<0.00342	<0.00339	<0.00363	160
Dibenzo(a,h)anthracene	1.383	<0.00714	<0.00858	<0.00714	<0.00738	<0.00684	<0.00678	<0.00726	0.8
Fluoranthene	6.507	0.019	<0.0395	0.025	<0.0339	<0.0315	<0.0312	<0.0334	4,300
Fluorene	<0.626	<0.0653	<0.0785	<0.0653	<0.0675	<0.0626	<0.062	<0.0664	560
Indeno(1,2,3-cd)pyrene	1.186	<0.0102	<0.0125	<0.0102	<0.0106	<0.0098	<0.00972	<0.0104	8
Naphthalene	<0.285	<0.0298	<0.0357	<0.0298	<0.0308	<0.0285	<0.0282	<0.0303	1.8
Phenanthrene	3.444	0.017	<0.0428	0.011	<0.0368	<0.0341	<0.0338	<0.0362	NL
Pyrene	6.880	0.015	<0.0766	0.015	<0.0659	<0.0611	<0.0606	<0.0649	4,200
Benzene	<0.00315	<0.00310	0.008	0.157	<0.0033	<0.00315	<0.0033	<0.003	0.03
Toluene	<0.00315	<0.00310	0.020	0.108	<0.0033	<0.00315	<0.0033	<0.003	12
Ethyl Benzene	<0.00315	<0.00310	0.046	0.129	<0.0033	<0.00315	<0.0033	<0.003	13
Xylenes (total)	<0.00630	<0.00620	0.175	1.509	<0.0066	<0.00630	<0.0066	<0.006	130

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8021B and 8310, respectively

Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet bgs)				Tier 1 SRO[1]
	SB-14 (1'-3')	SB-14 (8'-10')	SB-15 (1'-3')	SB-15 (8'-10')	
Acenaphthene	<0.160	<0.176	<0.160	<0.168	570
Acenaphthylene	<0.238	<0.263	<0.238	<0.250	NL
Anthracene	<0.124	<0.137	0.013	<0.130	12,000
Benzo(a)anthracene	<0.00928	<0.0109	0.061	<0.0104	2
Benzo(a)pyrene	<0.0152	<0.0168	0.063	<0.016	0.8
Benzo(b)fluoranthene	<0.0137	<0.0151	0.084	<0.0144	5
Benzo(ghi)perylene	<0.102	<0.113	0.082	<0.108	NL
Benzo(k)fluoranthene	<0.0129	<0.0143	0.040	<0.0136	49
Chrysene	<0.0114	<0.0126	0.092	<0.012	160
Dibenzo(a,h)anthracene	<0.0224	<0.0252	0.050	<0.024	0.8
Fluoranthene	<0.105	<0.116	0.152	<0.110	4,300
Fluorene	<0.209	<0.231	<0.209	<0.220	560
Indeno(1,2,3-cd)pyrene	<0.0327	<0.0361	0.058	<0.0344	8
Naphthalene	<0.095	<0.105	<0.095	<0.100	1.8
Phenanthrene	<0.114	<0.126	0.051	<0.120	NL
Pyrene	<0.204	<0.225	0.165	<0.214	4,200
Benzene	<0.00325	<0.00345	<0.0035	<0.00325	0.03
Toluene	<0.00325	<0.00345	<0.0035	<0.00325	12
Ethyl Benzene	<0.00325	<0.00345	<0.0035	<0.00325	13
Xylenes (total)	<0.00650	<0.00690	<0.0070	<0.00650	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedance of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 8021B and 8310, respectively

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Table 2 (Continued). Summary of Chemical Analysis of Soil Samples for BTEX and Polynuclear Aromatics (PNAs) (mg/Kg)

Compound	Sampling Location (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	B16 (3-5)	B16 (5-7)	B17 (3-5)	B17 (5-7)	B18 (5-7)	B18 (7-9)	B19 (3-5)	B19 (5-7)	
Acenaphthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	370
Acenaphthylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12,000
Benzo(a)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(a)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Benzo(b)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(ghi)perylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Benzo(k)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	9
Chrysene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	88
Dibenzo(a,h)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3,100
Fluorene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	560
Indeno(1,2,3-cd)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Naphthalene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1.8
Phenanthrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2,300
Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	0.030
Toluene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	12
Ethyl Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	13
Xylenes (total)	<0.0038	<0.0036	<0.0044	<0.0036	<0.0042	<0.0040	0.0026	<0.0020	150

[1] - Most stringent Soil Remediation Objective based on Industrial/Commercial property usage taken from 35 IAC 742 Appendix B, Table B
Bold - indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods 5035/8260B and 8310, respectively

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Table 3. Summary of Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Interval (feet)	pH	Flash Point (°F)	Paint Filter	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB1-1	0-2	7.54	>180	Pass	NA	<0.004	0.0707
SB1-2	4-6	6.60	>180	Pass	NA	<0.004	0.0290
SB1-3	8-10	6.79	>180	Pass	NA	<0.004	0.1040
SB2-1	0-2	6.5	>180	Pass	NA	<0.004	0.0000[1]
SB2-2	4-6	7.08	>180	Pass	NA	<0.004	0.0363
SB3-1	0-2	6.44	>180	Pass	NA	<0.004	0.0116
SB3-2	4-6	6.15	>180	Pass	NA	<0.004	0.0222
SB3-3	8-10	6.93	>180	Pass	NA	<0.004	0.0110
SB4-1	0-2	7.08	>180	Pass	NA	<0.004	0.1270
SB4-2	4-6	6.43	>180	Pass	NA	<0.004	0.0344
SB4-3	8-10	7.43	>180	Pass	NA	<0.004	0.0490
SB5-1	0-2	6.40	>180	Pass	NA	<0.004	0.0612
SB5-2	4-6	6.48	>180	Pass	NA	<0.004	0.0214
SB5-3	8-10	7.61	>180	Pass	NA	<0.004	0.0710
SB6-1	0-2	7.14	>180	Pass	NA	<0.004	0.0612
SB6-2	4-6	6.36	>180	Pass	NA	<0.004	0.0000
SB7-1	0-2	8.37	>180	Pass	NA	<0.004	0.1705
SB7-2	4-6	6.39	>180	Pass	NA	<0.004	0.1090
SB8-1	0-2	6.22	>180	Pass	NA	<0.004	0.0501
SB8-2	4-6	7.28	>180	Pass	NA	<0.004	0.0600
SB8-3	8-10	8.33	>180	Pass	NA	<0.004	0.0049
SB9-1	0-2	7.17	>180	Pass	NA	<0.004	0.0360
SB9-2	4-6	7.31	>180	Pass	NA	0.0319	0.0832
SB9-3	8-10	6.26	>180	Pass	NA	<0.004	0.1051

[1] - Actual lab results indicate negative value
Bold - indicates an exceedance of the most stringent Tier 1 SRO of 0.0075-mg/L
NA – Sample not analyzed for this compound
pH and Paint Filter via USEPA Methods 9040/9041 and 9095, respectively
Flammability and foo via ASTM D4982 and D2974A&C, respectively
Total and TCLP Lead via USEPA Methods 6010B and 1311/6010B

Table 3 (Continued). Summary of Soil Sample Analysis Results for Miscellaneous Parameters

Sample Location	Sample Interval (feet)	pH	Flash Point (°F)	Paint Filter	Total Lead (mg/Kg)	TCLP Lead (mg/L)	Fraction Organic Carbon
SB-10	1-3	NA	NA	NA	4.32	<0.004	NA
SB-10	8-10	NA	NA	NA	4.32	0.006	NA
SB-11	1-3	NA	NA	NA	3.02	<0.004	NA
SB-11	8-10	NA	NA	NA	4.07	<0.004	NA
SB-12	1-3	NA	NA	NA	6.17	<0.004	NA
SB-12	8-10	NA	NA	NA	0.422	<0.004	NA
SB-13	1-3	NA	NA	NA	0.326	<0.004	NA
SB-13	8-10	NA	NA	NA	<0.0244	<0.004	NA
SB-14	1-3	NA	NA	NA	2.73	<0.004	NA
SB-14	8-10	NA	NA	NA	260	3.62	NA
SB-15	1-3	NA	NA	NA	19.9	<0.004	NA
SB-15	8-10	NA	NA	NA	<0.0240	<0.004	NA

[1] - Actual lab results indicate negative value
Bold - indicates an exceedance of the most stringent Tier 1 SRO of 0.0075-mg/L
NA - Sample not analyzed for this compound
pH and Paint Filter via USEPA Methods 9040/9041 and 9095, respectively
Flammability and foc via ASTM D4982 and D2974A&C, respectively
Total and TCLP Lead via USEPA Methods 6010B and 1311/6010B

Table 4. Summary of Groundwater Sampling and Analysis Results (mg/L)

Monitoring Well	BTEX	PNAs	Lead
MW-1	None Detected	None Detected	None Detected
MW-3	None Detected	None Detected	**0.016**
MW-4	None Detected	None Detected	None Detected

Bold - indicates an exceedance of the Tier 1 GRO (Tier 1 GRO for Lead = 0.0075-mg/L)
NOTE - Per the March 7, 2002 IEPA approval letter, lead is not considered a contaminant of concern
BTEX, PNAs, and Total Lead via USEPA SW-846 Methods 8260B and 8021B, 8310, and 6010B, respectively

Table 5. Summary of Tier 1 SRO Exceedances in Vadose Zone Soils

Contaminant of Concern	Sampling Location	Sample Interval(ft bgs)	Concentration (mg/kg)	Tier 1 SRO for Migration to Groundwater (mg/kg)	Tier 1 SRO for Soil Ingestion (mg/kg)	Tier 1 SRO for Soil Inhalation (mg/kg)
Benzene	B-4	6-6.7	**1.540**	0.03	200	1.5
	B-10	6.7-7.4	**0.0863**	0.03	200	1.5
	SB-9	0-2	**0.458**	0.03	200	1.5
		4-6	**1.510**	0.03	200	1.5
Benzo(a)anthracene	SB-6	0-2	**3.56**	2	8	NA
		4-6	**4.80**	2	8	NA
	SB-10	1'-3'	**2.089**	2	8	NA
Benzo(a)pyrene	SB-6	0-2	**2.26**	8	0.8	NA
		4-6	**2.71**	8	0.8	NA
	SB-10	1-3	**1.572**	8	0.8	NA
Dibenzo(a,h)anthracene	B-9	4.5-5.2	**1.550**	2	0.8	NA
	SB-6	0-2	**1.79**	2	0.8	NA
		4-6	**2.74**	2	0.8	NA
	SB-9	4-6	**1.35**	2	0.8	NA
Indeno(1,2,3-cd)pyrene	SB-6	0-2	**12.50**	14	8	NA
		4-6	**13.9**	14	8	NA

Bold - Indicates an exceedence of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

Table 6. Exceedances of the Tier 1 SROs for the Ingestion and Inhalation Exposure Pathways

Contaminant of Concern	Sampling Location	Sample Depth (ft bgs)	Concentration (ppm)	Tier 1 SRO for Soil Ingestion (ppm)	Tier 1 SRO for Soil Inhalation (ppm)
Benzene	B-4	6'-6.7'	5.93	200	1.5
Benzo(a)pyrene	SB-6	0'-2'	**2.26**	0.8	NA
Dibenzo(a,h)anthracene		0'-2'	**1.79**	0.8	NA
Indeno(1,2,3-cd)pyrene		0'-2'	**12.50**	8	NA
Benzene	SB-9	4'-6'	**1.510**	200	1.5
		8'-10'	**5.930**	200	1.5
Benzo(a)pyrene	SB-10	1'-3'	**1.572**	0.8	NA

Bold - indicates an exceedence of the most stringent Tier 1 SRO
NA - A Tier 1 SRO has not been established for this compound for this exposure route

Table 7. Comparison of Highest Observed Concentrations of COCs and Soil Saturation Limit

Compound	Maximum Observed Concentration[1] (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	1.51	870
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

[1] - Maximum observed concentrations summarized in Table 5
NA - A Soil Saturation Limit has not been established for this compound in 742 Appendix A, Table A

Table 8. Tier 2 SROs and Maximum Observed Contaminant Concentrations

Contaminant	Maximum Observed Concentration (mg/Kg)	Tier 1 SRO for the Migration to Groundwater Exposure Pathway (mg/Kg)	Calculated Tier 2 SRO[1] (mg/Kg)
Benzene	1.51	0.03	19.93
Benzo(a)anthracene	4.80	2	95.93
Benzo(a)pyrene	2.71	8	1,012.67
Dibenzo(a,h)anthracene	2.74	2	743.43
Indeno(1,2,3-cd)pyrene	13.9	14	$5.53X10^3$

[1] - Tier 2 calculations are provided in Appendix A of this report.

Table 9. Distance Required for COC's to Attenuate vs Distance Across Ogden Avenue

Contaminant	Sample Location[1]	Distance to Attenuate	Distance Across Ogden Avenue
Benzo(a)anthracene	SB-10	78	196
Benzo(a)pyrene	SB-10	29	196
Dibenzo(a,h)anthracene	SB-9	<1.0	198
Indeno(1,2,3-cd)pyrene	SB-6	42.5	462
Benzene	B-5	131.3	198
Ethylbenzene	B-9	17.7	368

[1] - Sample location with shortest distance from west side of Ogden Avenue chosen for purpose of R26 calculations.

Table 10. Summary of Estimated Hydraulic Conductivities

Monitoring Well	Hydraulic Conductivity (m/day)
MW-1	6.5
MW-4	5.0

bold - indicates value used in Tier 2 calculations

APPENDIX A
REVISED FATE AND TRANSPORT MODELING

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Soil Component of the Groundwater Ingestion Exposure Route Across Odgen Avenue

Remediation Objective RO (mg/kg) = GW_{source}/LF_{sw}
Groundwater at the source, GW_{source} (mg/L) = $GW_{comp}/(C_{(x)}/C_{source})$
Leaching Factor, LF_{sw} ((mg/L_{water})/(mg/kg_{soil})) = $(\rho_s*(cm^3*kg)/(L*g))/((\theta_{wa}+(k_s*\rho_s)+(H'*\theta_{as}))*(1+((U_{gw}*\delta_{gw})/(I*W))))$
Volumetric Water Content in Vadose Zone Soils, θ_{wa} (cm^3_{water}/cm^3_{soil}) = $w*\rho_s/\rho_w$
Volumetric Air Content in Vadose Zone Soils, θ_{as} (cm^3_{air}/cm^3_{soil}) = $\theta_T-(w*\rho_s/\rho_w)$
Soil-Water Sorption Coefficient, $k_s = K_{oc}*f_{oc}$
Groundwater Darcy Velocity, U_{gw} (cm/yr) = K*I

Solving for Groundwater at the source

GW_{source} (mg/L) = $GW_{comp}/(C_{(x)}/C_{source})$

GW_{comp} (mg/L) =
- 0.00013 chemical specific (Benzo(a)anthracene here) TACO
- 0.0002 chemical specific (Benzo(a)pyrene here)
- 0.0003 chemical specific (Dibenzo(a,h)anthracene here)
- 0.00043 chemical specific (Ideno(1,2,3-cd)pyrene here)
- 0.005 chemical specific (Benzene here)
- 0.7 chemical specific (Ethylbenzene here)

$(C_{(x)}/C_{source})$ = See Table Below TACO calc

GWs_{source} =
- 0.120284 Benzo(a)anthracene
- 0.495536 Benzo(a)pyrene
- 0.097699 Dibenzo(a,h)anthracene
- 81.33077 Indeno(1,2,3-cd)pyrene
- 63.86111 Benzene
- 4.85E+11 Ethylbenzene

Contaminant Expanding Chemical Class	C(source) (mg/L)	x-cm (varies)	alpha-x cm	alpha-y cm	alpha-z cm	Sw-cm (93-m)	Sd (200-cm)	lambda 1/day	K cm/d	theta-t	I gradient	U cm/day	C(x) (mg/L)	C(x)/C(source)
Benzo(a)anthracene	0.120284469	5974	597.408	199.136	29.8704	2743.2	200	0.00051	6.54048	0.36	0.0222222	0.4037	0.00013	1.1E-03
Benzo(a)pyrene	0.4955357958	5974	597.408	199.136	29.8704	2743.2	200	0.00055	6.54048	0.36	0.0222222	0.4037	0.0002	4.0E-04
Dibenzo(a,h)anthracene	0.0976994009	6035	603.504	201.168	30.1752	2743.2	200	0.00037	6.54048	0.36	0.0222222	0.4037	0.0003	3.1E-03
Indeno(1,2,3-cd)pyrene	81.335772279	14082	1408.176	469.392	70.4088	2743.2	200	0.00047	6.54048	0.36	0.0222222	0.4037	0.00043	5.3E-06
Benzene	63.861107262	6035	603.504	201.168	30.1752	2743.2	200	0.0009	6.54048	0.36	0.0222222	0.4037	0.005	7.8E-05
Ethylbenzene	4.85435E+11	11217	1121.684	373.898	56.0832	2743.2	200	0.003	6.54048	0.36	0.0222222	0.4037	0.7	1.4E-12

C(source) = Maximum observed groundwater concentration
x = Distance from point of exceedance across Ogden Ave in direction of groundwater flow (shortest distance used if more than one point)
Sw = Width of contaminated area perpendicular to groundwater flow direction, See Attached Figure A-1
Sd = Source Depth, 200-cm default value.
K = Hydraulic conductivity measured by DAI
theta-t = Total Porosity taken as TACO default for clay
I = Hydraulic Gradient taken from DAI's static water level measurements
C(x) = Desired groundwater concentration at distance x (across Ogden Ave)
C(x)/C(source) = Attenuation Factor

Solving for Soil-Water Sorption Coefficient

$k_s = K_{oc} * f_{oc}$

K_{oc} (cm³/g) =	398000	chemical specific (Benzo(a)anthracene here)	TACO
	1020000	chemical specific (Benzo(a)pyrene here)	
	3800000	chemical specific (Dibenzo(a,h)anthracene here)	
	3470000	chemical specific (Ideno(1,2,3-cd)pyrene here)	
	58.9	chemical specific (Benzene here)	
	383	chemical specific (Ethylbenzene here)	
f_{oc} (g/g) =	0.002	default for subsurface soil	RBCA
k_s =	796	(cm³/g)	
	2040		
	7600		
	6940		
	0.1178		
	0.726		

Solving for Groundwater Darcy Velocity

U_{gw} (cm/yr) = K*I

K (cm/yr) =	2387.2762	site specific	calculated
I (cm/cm) =	0.0222222	site specific	calculated
U_{gw} =	53.05056		

Solving for Leaching Factor

LF_{sw} ((mg/L$_{water}$)/(mg/kg$_{soil}$)) = (ρ_s*(cm³*kg)/(L*g))/((θ$_{ws}$+(k_s*ρ_s)+(H'*θ$_{as}$))*(1+((U$_{gw}$*δ$_{gw}$)/(I*W))))

ρ_s (g/cm³) =	1.7	default for clay	RBCA
θ_{ws} =	0.3	default for subsurface soil	RBCA
k_s =	796	calculated above	TACO calc
	2040		
	7600		
	6940		
	0.1178		
	0.726		
H' =	0.000137	chemical specific (Benzo(a)anthracene here)	TACO
	6.31E-05	chemical specific (Benzo(a)pyrene here)	
	6.03E-07	chemical specific (Dibenzo(a,h)anthracene here)	
	6.56E-05	chemical specific (Ideno(1,2,3-cd)pyrene here)	
	0.228	chemical specific (Benzene here)	
	0.323	chemical specific (Ethylbenzene here)	
θ_{as} =	0.13	default for subsurface soils	TACO
U_{gw} =	53.05056	calculated above	TACO calc
δ_{gw} (cm) =	200	default	RBCA
I (cm/yr) =	30	default	RBCA
W (cm) =	4206.24	site specific	
LF_{sw} =	0.001159	Benzo(a)anthracene	
	0.000452	Benzo(a)pyrene	
	0.000121	Dibenzo(a,h)anthracene	
	0.000133	Ideno(1,2,3-cd)pyrene	
	2.959328	Benzene	
	0.994697	Ethylbenzene	

Solving for Remediation Objective

	RO (mg/kg) = GW_{source}/LF_{sw}		
GW_{Source} =	0.1202845	Benzo(a)anthracene	
	0.4955358	Benzo(a)pyrene	
	0.0978994	Dibenzo(a,h)anthracene	
	81.330772	Ideno(1,2,3-cd)pyrene	
	63.861107	Benzene	
	4.854E+11	Ethylbenzene	
LF_{sw} =	0.0011588	calculated above	TACO calc
	0.0004521		
	0.0001214		
	0.0001329		
	1.9593265		
	0.9948969		

RO =	109.82 mg/kg	Benzo(a)anthracene	
	1095.886	Benzo(a)pyrene	
	904.9568	Dibenzo(a,h)anthracene	
	611918.2	Ideno(1,2,3-cd)pyrene	
	21.57962	Benzene	
	4.88E+11	Ethylbenzene	400 default to soil saturation limit

Groundwater Ingestion Exposure Route Across Ogden Ave

Solving for Remediation Objective

	RO (mg/kg) = GW_{source}/LF_{sw}		
Soil Conc (obs) =	2.059	Benzo(a)anthracene	
	1.572	Benzo(a)pyrene	
	1.35	Dibenzo(a,h)anthracene	
	13.9	Ideno(1,2,3-cd)pyrene	
	1.51	Benzene	
	16.1	Ethylbenzene	
LF_{sw} =	0.00116	calculated	TACO calc
	0.00045		
	0.00012		
	0.00013		
	2.95933		
	0.9849		
	GW_{source} 0.00239	mg/kg	Benzo(a)anthracene
	0.00071		Benzo(a)pyrene
	0.00016		Dibenzo(a,h)anthracene
	0.00185		Ideno(1,2,3-cd)pyrene
	4.46858		Benzene
	15.0229		Ethylbenzene

Solving for Groundwater Migration from the source

Chemical Name (CAS)	C(source)	x-cm	alpha-x	alpha-y	alpha-z	Sw-cm	Sd	Sediment	K	theta-t	I	U	C(x)	C(x)/C(source)
Unit Conversion	(mg/L)	(miles)	cm	cm	cm	(20-fl)	cm	(cm/sec)	(cm/sec)		gradient	(cm/sec)	(mg/L)	
Benzo(a)anthracene	0.0023855	2,377	237.744	79.2480	11.8872	3,048	200	0.00061	6.54048	0.36	0.02222222	0.40373333	0.00013	0.052724968362
Benzo(a)pyrene	0.0007108	884	88.392	29.4640	4.4196	3,048	200	0.00065	6.54048	0.36	0.02222222	0.40373333	0.00020	0.27599810658
Dibenzo(a,h)anthracene	0.0001639	30	3.048	1.0160	0.1524	3,048	200	0.00037	6.54048	0.36	0.02222222	0.40373333	0.00016	0.072528897115
Ideno(1,2,3-cd)pyrene	0.0018475	1,295	129.54	43.1800	6.477	3,048	200	0.00047	6.54048	0.36	0.02222222	0.40373333	0.00043	0.23184236892
Benzene	4.4685816	4,002	400.2024	133.4008	20.01012	3,048	200	0.0009	6.54048	0.36	0.02222222	0.40373333	0.00488	0.001116404857
Ethylbenzene	15.022944	539	53.9496	17.9832	2.69748	3,048	200	0.003	6.54048	0.36	0.02222222	0.40373333	0.69888	0.046517540183

C(source) = Maximum observed groundwater concentration

x = Distance from point of exceedance across Ogden Ave in direction of groundwater flow (shortest distance used if more than one point)

Sw = Width of contaminated area perpendicular to groundwater flow direction, See Attached Figure A-1

Sd = Source Depth, 200-cm default value.

K = Hydraulic conductivity measured by DAI

theta-t = Total Porosity taken as TACO default for clay

I = Hydraulic Gradient taken from DAI's static water level measurements

C(x) = Desired groundwater concentration at distance x (across Ogden Ave)

C(x)/C(source) = Attenuation Factor

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Distance to Attenuation in Feet Based Upon R26 Modeling Equation

	x in ft
Benzo(g)anthracene	78
Benzo(a)pyrene	29
Dibenzo(a,h)anthracene	<1
Indeno(1,2,3-cd)pyrene	42.5
Benzene	131.3
Ethylbenzene	17.7

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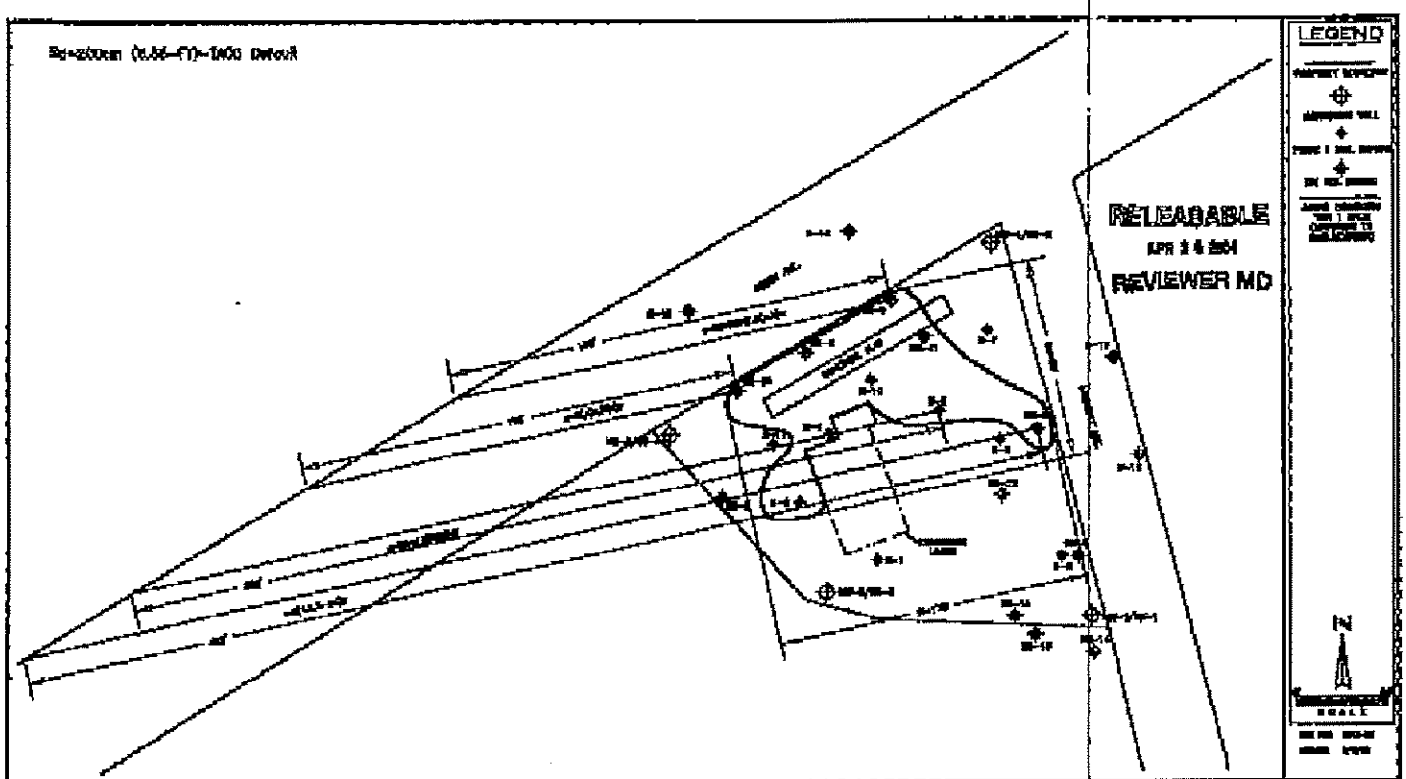

ENVIRONMENTAL DAI

MEG YARD 18
4228 SOUTH LAPHDALE AVENUE
LYONS, ILLINOIS

FIGURE A-1
R-28 PARAMETERS AND
GROUNDWATER FLOW DIRECTION

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APPENDIX B
HIGHWAY AUTHORITY AGREEMENT

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TIERED APPROACH TO CORRECTIVE-ACTION OBJECTIVES AGREEMENT

This Agreement is entered into this 21st day of January, 2004 pursuant to 35 Ill. Admin. Code Section 742.1020 by and between Material Service Corp. ("Owner/Operator") referred to herein as "Owner/Operator," and the State of Illinois Department of Transportation ("Department"), as follows:

1. This Agreement is not binding upon the Department until it is executed by the undersigned representative of the Department and prior to execution, this Agreement constitutes an offer by Owner/Operator. The duly authorized representatives of Owner/Operator have signed this Agreement and this Agreement is binding upon them, their successors and assigns.

2.a. Owner/Operator is pursuing a corrective action of a Site and of the right-of-way adjacent to the boundary of the Site located at 4226 South Lawndale Avenue, Lyons, Illinois (the "Site").

2.b. Attached as Exhibit A are site maps prepared by Owner/Operator which show the area of estimated contaminant impacted soil and/or groundwater at the time of this Agreement in the right-of-way above Tier 1 residential levels under 35 Ill. Admin. Code Part 742. Also shown in Exhibit A are tables prepared by Owner/Operator showing the concentration of contaminants of concern, hereafter "Contaminants," in soil and/or groundwater within the Site and which shows the applicable Tier 1 soil remediation objectives for residential property and Tier 1 objectives for groundwater of the Illinois Pollution Control Board ("IPCB") which are exceeded along the boundary of the Site adjacent to the Right-of-Way. The right-of-way, and only the right-of-way, as described in Exhibit B, hereinafter the "Right-of-Way," adjacent to the Site is subject to this Agreement. As the drawings in the Exhibits are not surveyed plats, the boundary of the Right-of-Way in the Exhibits may be an approximation of the actual right-of-way lines.

The Right-of-Way is impractical to sample for Contaminants; however, the parties believe that the area of the Right-of-Way is adequate to encompass soil and/or groundwater within the Right-of-Way possibly impacted with Contaminants from a release at the Site.

2.c. The Illinois Emergency Management Agency has assigned incident number 951401 to this release at the Site.

2.d. Owner/Operator intends to request risk-based, site specific soil and/or groundwater remediation objectives from the Illinois Environmental Protection Agency ("IEPA") under 35 Ill. Admin. Code Part 742.

2.e. Under these rules, use of risk-based, site specific remediation objectives in the Right-of-Way may require the use of a Highway Authority Agreement as defined in 35 Ill. Admin. Code Section 742.1020.

3. The Department holds a fee simple interest or a dedication for highway purposes in the Right-of-Way, or the Right-of-Way is a platted street, and has jurisdiction of the Right-of-Way. For purposes of this Agreement, "jurisdiction" means that the Department exercises access control over the use of groundwater beneath the Right-of-Way and over access to the soil beneath the Right-of-Way because it requires a permit for that access.

4.a. Under 35 Ill. Admin. Code Section 742.1020, this Agreement is intended to be an acceptable "Highway Authority Agreement" to IEPA, as the Department is willing to agree that it will not allow the use of groundwater under the highway Right-of-Way as a potable or other domestic supply of water and that it will limit access as described herein to soil under the highway Right-of-Way that is contaminated from the release at levels above residential Tier 1 remediation objectives.

4.b. The IEPA and Illinois Attorney General ("AG") must review and approve this Agreement, and this Agreement shall be referenced in the IEPA's "No Further

Remediation" determination in the chain of title for the Site in the county where the Site is located.

4.c. This Agreement shall be null and void as a Highway Authority Agreement should the IEPA or AG not approve it or should it not be referenced in the "No Further Remediation" determination, provided, however, that this Agreement shall be effective between the Owner/Operator and the Department immediately upon signature by their representatives.

5. The Department promises IEPA and the Owner/Operator that it will prohibit the use of groundwater that is contaminated from the release at the Site at levels above Tier 1 remediation objectives beneath its Right-of-Way as a potable or other domestic supply of water and will limit access to soil as described herein under the Right-of-Way that is contaminated from the release at the Site at levels above Tier 1 remediation objectives. As the pavement in the Right-of-Way may be considered an engineered barrier, the Owner/Operator agrees to reimburse the Department for maintenance activities requested by Owner/Operator in writing in order to maintain it as a barrier. The Department does not otherwise agree to perform maintenance of the Right-of-Way, nor does it agree that the highway Right-of-Way will always remain a highway or that it will maintain the Right-of-Way as an engineered barrier.

6. The Owner/Operator agrees to defend, indemnify and hold harmless the Department, and other highway authorities, if any, maintaining the highway Right-of-Way by an agreement with the Department, and the Department's agents, contractors or employees for all obligations asserted against or costs incurred by them, including reasonable attorney's fees and court costs, associated with the release of Contaminants from the Site, regardless whether said obligations or costs were caused by the negligence, but not the gross negligence, of them.

7. As an additional consideration, Owner/Operator agrees to reimburse the Department for the reasonable costs it has incurred in protecting human health and the environment, including, but not limited to, identifying, investigating, handling, storing and disposing of contaminated soil and groundwater in the Right-of-Way as a result of the release of Contaminants at this Site. The Department has documented those costs for Owner. Those costs amount to (Not Applicable). If costs have been incurred, a cashier's check made payable to "Treasurer, State of Illinois" shall be tendered to the Department of Transportation at the time Owner/Operator furnishes a signed Agreement to the Department for its signature. That check will be deposited when this Agreement is signed by all necessary parties.

8. This Agreement shall be binding upon all successors in interest to the Owner/Operator and to the interest of the Department in the highway Right-of-Way. A successor in interest of the Department would include a highway authority to which the Department would transfer jurisdiction of the highway.

9. Violation of the terms of this Agreement by Owner/Operator, or their successors in interest, may be grounds for voidance of this Agreement as a Highway Authority Agreement. Violation of the terms of this Agreement by the Department will not void this Agreement, unless the IEPA has determined that the violation is grounds for voiding this Agreement as a Highway Authority Agreement and the Department has not cured the violation within such time as IEPA has granted to cure the violation.

10. This Agreement shall continue in effect from the date of this Agreement until the Right-of-Way is demonstrated to be suitable for unrestricted use and there is no longer a need for this Agreement as a Highway Authority Agreement, and the IEPA has, upon written request to the IEPA by the Owner/Operator and notice to the Department, amended the notice in the chain of title of the Site to reflect unencumbered future use of that highway Right-of-Way.

11. This Agreement is in settlement of claims the Department may have arising from the release of Contaminants into the Right-of-Way associated with Incident number 951401.

12. This Agreement does not limit the Department's ability to construct, reconstruct, improve, repair, maintain and operate a highway upon its property or to allow others to use the highway Right-of-Way by permit. To that extent, the Department reserves the right and the right of those using its property under permit to remove contaminated soil or groundwater above Tier 1 residential remediation objectives from its Right-of-Way and to dispose of them as they deem appropriate not inconsistent with applicable environmental regulations so as to avoid causing a further release of the Contaminants and to protect human health and the environment.

Prior to taking any such action, the Department will first give Owner/Operator written notice, unless there is an immediate threat to the health or safety to any individual or to the public, that it intends to perform a site investigation in the Right-of-Way and remove or dispose of contaminated soil or groundwater to the extent necessary for its work. Failure to give notice is not a violation of this Agreement. The removal or disposal shall be based upon the site investigation (which may be modified by field conditions during excavation). A copy of the site investigation report will be provided to Owner/Operator. If practicable, as reasonably determined by the Department, the Department may provide Owner/Operator with an opportunity to perform the Site investigation and to remove and dispose of the contaminated soil and/or groundwater necessary for the Department's work in advance of that work.

The Owner/Operator shall reimburse the reasonable costs incurred by the Department to perform the site investigation and to dispose of any contaminated soil or groundwater, provided, however, that if notice to Owner/Operator has not been given and there was no immediate threat to health or safety, reimbursement for those costs shall be limited to $10,000.00. There is a rebuttable presumption that the Contaminants found in the

highway Right-of-Way arose from the release of Contaminants from the Site. Should Owner/Operator not reimburse the reasonable costs under the conditions set forth herein, this Agreement shall be null and void, at the Department's option, upon written notice to Owner/Operator by the Department that those costs have not been reimbursed. Owner/Operator may cure that problem within twenty working days by making payment, or may seek to enjoin that result.

13. Written notice required by this Agreement shall be mailed to the following:

If to Owner/Operator:

Name: Gary O'Toole
Company: Material Service Corp.
Street: 4226 South Lawndale Avenue
City, State, Zip: 60534-1199

If to Department:

John P. Kos, District One Engineer
201 West Center Court
Schaumburg, Illinois 60196
Telephone: 847/705-4110

14. The Department's sole responsibility under this Agreement with respect to others using the highway Right-of-Way under permit from the Department is to include the following, or similar language, in the future standard permit provisions and to make an effort to notify its current permit holders of the following:

As a condition of this permit, the permittee shall request the District Permit Office to identify sites in the Right-of-Way where access to contaminated soil or groundwater is governed by Tiered Approach to Corrective-Action Objectives ("TACO") Agreements. The permittee shall take measures before, during and after any access to these sites to protect worker safety and human health and the environment. Excavated, contaminated soil should be

managed off-site in accordance with all environmental laws and regulations.

Owner/Operator hereby releases the Department from liability for breach of this Agreement by others under permit and agrees to defend and indemnify the Department against claims that may arise from others under permit causing a breach of this Agreement. Owner/ Operator agrees that its personnel, if any, at the Site who are aware of this Agreement will notify anyone they know is excavating in the Right-of-Way about this Agreement.

15. Should the Department breach this Agreement, Owner/Operator's sole remedy is for an action for damages in the Illinois Court of Claims. Any and all claims for damages against the Department, its agents, contractors, employees or its successors in interest arising at any time for a breach of paragraph 5 of this Agreement are limited to an aggregate maximum of $20,000.00. No other breach by the Department, its agents, contractors, employees and its successors in interest of a provision of this Agreement is actionable in either law or equity by Owner/Operator against the Department or them and Owner/Operator hereby releases the Department, its agents, contractors, employees and its successors in interest for any cause of action it may have against them, other than as allowed in this paragraph, arising under this Agreement or environmental laws, regulations or common law governing the contaminated soil or groundwater in the highway Right-of-Way. Should the Department convey, vacate or transfer jurisdiction of that highway Right-of-Way, Owner/Operator may pursue an action under this Agreement against the successors in interest, other than a State agency, in a court of law.

16. This Agreement is entered into by the Department in recognition of laws passed by the General Assembly and regulations adopted by the Pollution Control Board which encourage a tiered-approach to remediating environmental contamination. This

Agreement is entered into by the Department in the spirit of those laws and under its right and obligations as a highway authority. Should any provisions of this Agreement be struck down as beyond the authority of the Department, however, this Agreement shall be null and void.

IN WITNESS WHEREOF, Owner/Operator, Material Service Corp., has caused this Agreement to be signed by its duly authorized representative.

BY: Gary W. Tool DATE: JAN. 15, 2004
(Title) DIRECTOR

IN WITNESS WHEREOF, the Department has caused this Agreement to be signed by its Secretary.

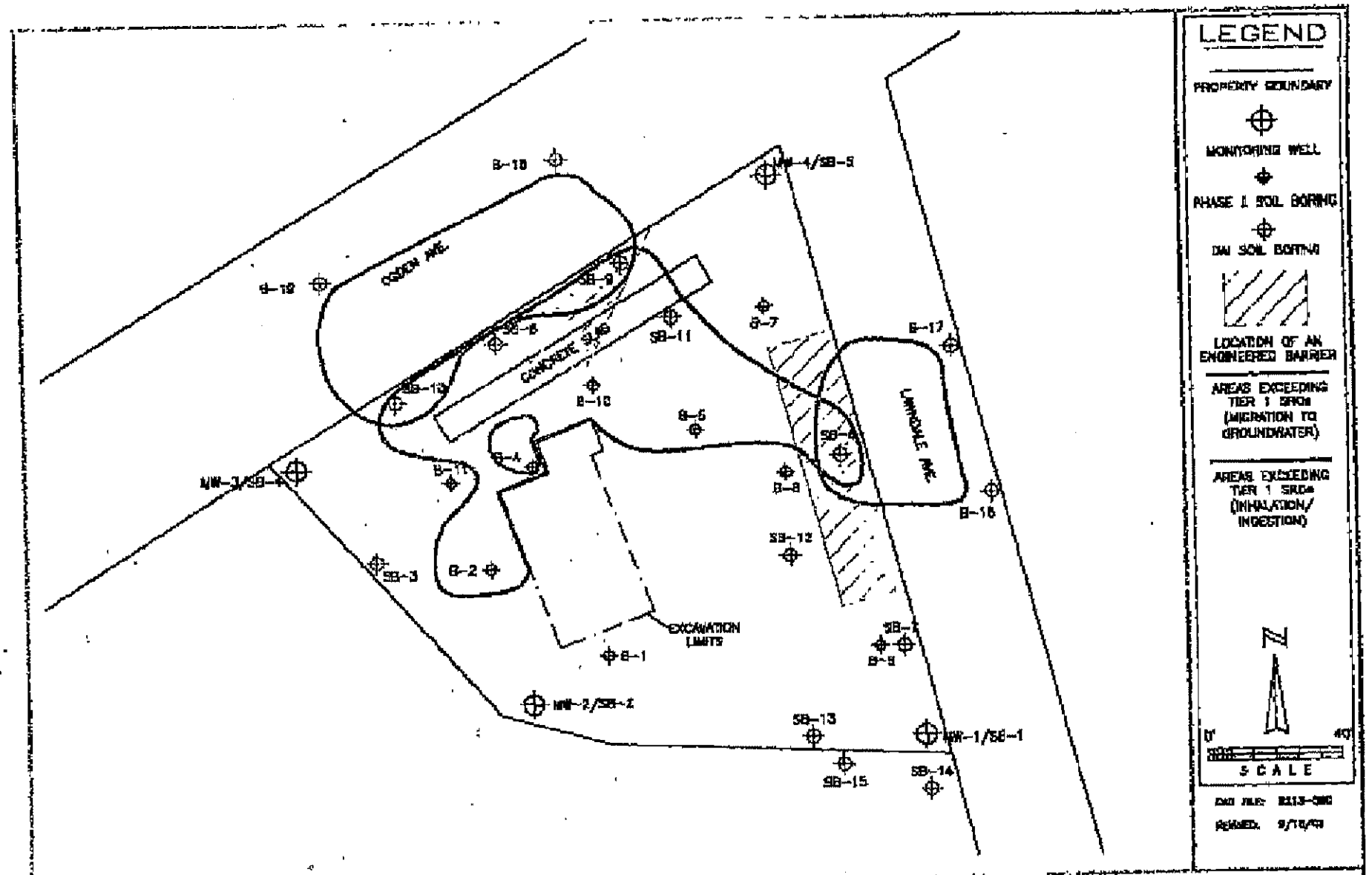
Illinois Department of Transportation

BY: DATE: 1/21/04
Timothy W. Martin
Secretary

This Agreement is approved on behalf of the Office of the Illinois Attorney General.

BY: DATE: 1/29/04

EXHIBIT A



DAI ENVIRONMENTAL

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 1
EXTENT OF CONTAMINATION AND
AREA REQUIRING AN ENGINEERED BARRIER

Table 1. Summary of Soil Sample Analyses for BTEX and Polynuclear Aromatics near Right-of-Way (mg/Kg)

Compound	Sample ID (Sample Depth Interval in Feet)							Tier 1 SRO[1]
	SB6-1 (0-2)	SB6-2 (4-6)	SB9-1 (0-2)	SB9-2 (4-6)	SB9-3 (8-10)	SB-18 (0-5)	SB-19 (8-10)	
Acenaphthene	<0.047	<0.051	0.158	0.646	<0.050	<0.479	<0.050	570
Acenaphthylene	<0.0697	<0.0759	*0.281*	*0.682*	<0.0748	<0.714	<0.0745	NL
Anthracene	1.74	2.24	<0.0378	0.0368	<0.0389	0.563	0.007	12,000
Benzo(a)anthracene	3.56	4.80	0.0209	0.418	0.0514	2.059	0.011	0.9
Benzo(a)pyrene	2.36	2.71	0.0220	0.246	0.0836	1.571	<0.00476	0.09
Benzo(b)fluoranthene	2.60	3.25	0.0174	0.297	0.0836	1.982	0.009	0.9
Benzo(ghi)perylene	*1.25*	*1.84*	<0.0312	*0.493*	*0.116*	*1.339*	<0.032	NL
Benzo(k)fluoranthene	1.72	2.16	0.0128	0.395	0.0645	1.008	0.004	9
Chrysene	2.46	3.18	0.0139	0.141	0.0442	2.146	0.007	88
Dibenzo(a,h)anthracene	1.79	2.74	0.0081	1.35	0.143	1.283	<0.00914	0.09
Fluoranthene	8.80	12.0	<0.0520	0.786	0.080	6.507	0.019	3,100
Fluorene	<0.0611	<0.0665	<0.0637	0.445	<0.0656	<0.626	<0.0653	560
Indeno(1,2,3-cd)pyrene	12.50	13.9	0.0160	1.50	0.594	1.180	<0.0102	0.9
Naphthalene	<0.028	<0.030	0.138	0.514	<0.030	<0.285	<0.0298	12
Phenanthrene	*4.58*	*6.17*	<0.0347	*0.371*	<0.0357	*3.444*	*0.017*	NL
Pyrene	8.21	11.1	<0.0622	0.555	0.093	6.580	0.013	2,300
Benzene	<0.0111	<0.0121	0.458	1.510	5.930	<0.00315	<0.00310	0.03
Toluene	<0.0111	<0.0121	0.087	0.356	<0.0119	<0.00315	<0.00310	12
Ethylbenzene	<0.0111	<0.0121	0.287	7.870	1.010	<0.00315	<0.00310	13
Xylenes (total)	<0.0111	<0.0121	0.195	6.640	2.320	<0.00630	<0.00620	150

[1] - Most stringent Soil Remediation Objective based on Residential property usage taken from 35 IAC 742 Appendix B, Table B
Bold - Indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods SW8260B/5035 and SW8310, respectively

Table 1 (Continued). Summary of Soil Sample Analyses for BTEX and Polynuclear Aromatics in Right-of-Way (mg/Kg)

Compound	Sampling Location (Sample Depth Interval in Feet bgs)								Tier 1 SRO[1]
	BH5 (7-9)	BH6 (5-7)	BH7 (3-5)	BH7 (5-7)	BH8 (3-5)	BH8 (7-9)	BH9 (3-5)	BH9 (5-7)	
Acenaphthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	570
Acenaphthylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12,000
Benzo(a)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(a)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Benzo(b)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Benzo(ghi)perylene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Benzo(k)fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	9
Chrysene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	88
Dibenzo(a,h)anthracene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.09
Fluoranthene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3,100
Fluorene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	560
Indeno(1,2,3-cd)pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.9
Naphthalene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	12
Phenanthrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NL
Pyrene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2,300
Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	0.03
Toluene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	12
Ethyl Benzene	<0.0019	<0.0018	<0.0022	<0.0018	<0.0021	<0.0020	<0.0019	<0.0020	13
Xylenes (total)	<0.0038	<0.0036	<0.0044	<0.0036	<0.0042	<0.0040	0.0026	<0.0020	150

[1] - Most stringent Soil Remediation Objective based on Residential property usage taken from 35 IAC 742 Appendix B, Table B
Bold - Indicates an exceedence of the most stringent Tier 1 SRO
Italicized - Contaminant detected, by no SRO to compare to
NL - Tier 1 SRO not listed for this contaminant
BTEX and PNAs via USEPA Methods SW8260B/5035 and SW8310, respectively

EXHIBIT B

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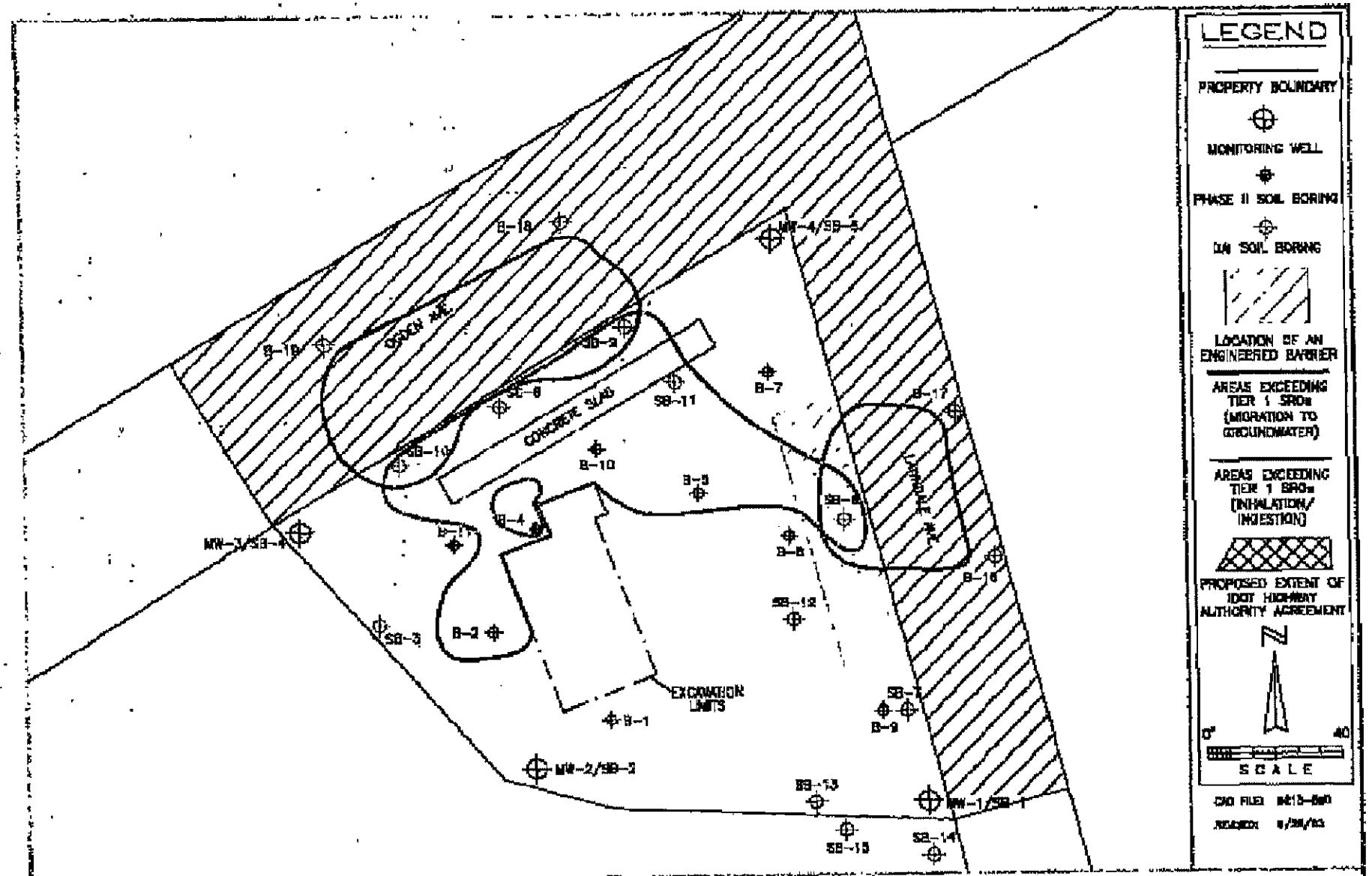

ENVIRONMENTAL DAI

MSC YARD 18
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 2
AREA OF PROPOSED IDOT
HIGHWAY AUTHORITY AGREEMENT

APPENDIX C
GROUNDWATER INGESTION PATHWAY EXCLUSION DEMONSTRATION

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The groundwater ingestion pathway can be excluded if the requirements of 35 IAC 742.300, 742.305, 742.320, and 742.1015 are met. The meeting of these requirements are discussed below.

742.305a: This part requires that the sum of the concentrations of concern (or organic contaminants) do not exceed the soil attenuation capacity. The soil attenuation capacity is defined in 742.215. For the purposes of this analysis, the soil attenuation capacity is equal to the natural organic carbon concentration of the soil. Table 4 in the Section 3.2.3 reports the Fraction of Organic Carbon (f_{oc}) observed in twenty-four (24) soil samples collected from the site. Based upon these results, the average f_{oc} of the subsurface soils at the site is 5.5% which is equivalent to 55,000-mg/Kg. Review of the soil sampling and analysis results summarized in Table 3 of the text of this report clearly indicate that the sum of all organic compounds observed at any discrete sampling point is significantly below the soil attenuation capacity (55,000-mg/Kg) of the soils. Therefore, the soil attenuation capacity is not exceeded at any location on the site.

742.305b: This part requires that the sum of concentrations of any organic contaminants of concern remaining in the soil do not exceed the soil saturation limit as determined in 742.220. The soil saturation limits for compounds whose melting points are less than 30°C are provided in 742 Appendix A, Table A. Table F-1 compares the maximum detected concentrations of the contaminants of concern to those provided in 742 Appendix A, Table A, and indicates that none of the observed concentrations exceed the soil saturation limit.

Table C-1. Comparison of Highest Observed Concentrations of COCs in Vadose Zone Soils and Soil Saturation Limit

Compound	Maximum Observed Concentration (mg/Kg)	Soil Saturation Limit (mg/Kg)
Benzene	1.51	870
Benzo(a)anthracene	4.80	NA
Benzo(a)pyrene	2.71	NA
Dibenzo(a,h)anthracene	2.74	NA
Indeno(1,2,3-cd)pyrene	13.9	NA

NA - A Soil Saturation Limit has not been established for this compound in 35 IAC 742 Appendix A, Table A

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742.305c: This requires that none of the soils exhibit any of the characteristics of reactivity for hazardous wastes. There is no evidence nor reason to believe that any soils beneath the site exhibit the characteristics of reactivity.

742.305d: This requires that none of the soils exhibit a pH less than 2.0 or greater than 12.5. Twenty-four (24) soil samples were analyzed for pH via USEPA Method 9045. The results of these analyses were summarized in Table 4 in the Tables Section of this report. The pH of these samples ranged from 6.15 to 8.37.

742.305e: This requires that none of the soils are hazardous wastes by virtue of the characteristic of toxicity for the following compounds: arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver. The TCLP Lead concentrations observed in the thirty-five (35) soil samples were below the hazardous regulatory level (5-mg/L).

742.320a: This requires that the above-discussed requirements of 742.305 are met.

742.320b: This requires that any free product has been removed by corrective action to the maximum extent possible. No free product was observed during the investigations.

742.320c: This requires that the source of the release is not located within the minimum or maximum setback zone of a potable water supply well nor within a regulated recharge area of a potable water supply well. The Village of Lyons Ordinance Number 5-18-99-3 prohibiting use of groundwater as a potable water supply well insures adherence to this requirement.

742.320d: A demonstration of compliance with 742.1015 is included below.

742.320e: This requirement addresses the potential contamination of an existing water supply well. As previously discussed, no potable groundwater supply wells presently exist, nor will they be allowed in the future by virtue of the ordinance, and therefore, this requirement is not applicable.

742.320f: This requirement states that the concentration of any contaminants in groundwater discharging into a surface water must meet the applicable surface water quality standard. No contaminants will migrate or be discharged to any surface water body. This is proven by the R26 calculations that demonstrate all contamination will fully attenuate to the Tier 1 Class I GROs before crossing Ogden Ave.

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742.1015a: This requirement ensures that if the installation of public potable water supply wells by a unit of local government is not expressly prohibited, a Memorandum of Understanding (MOU) is entered into. The Village of Lyons Ordinance Number 5-18-99-3 has been approved by the IEPA without requiring a Memorandum of Understanding (MOU).

742.1015b(1): A certified copy of the ordinance was included as Attachment A of Appendix C of the original CACR. It has since been approved without requiring an MOU.

742.1015b(2): No contaminants of concern were detected in the groundwater.

742.1015b(3): No contaminant of concern were detected in the groundwater.

742.1015b(4): Material Service Corporation (MSC), the current owner of the site, also owns the property to the west onto which contaminated groundwater has migrated. IDOT owns the property on which Ogden Avenue is paved. A Highway Authority Agreement will be obtained in regards to contamination under the road.

742.1015b(5): Material Service Corporation (MSC), the current owner of the site, also owns the property to the west onto which contaminated groundwater has migrated. IDOT owns the property on which Ogden Avenue is paved. A Highway Authority Agreement will be obtained in regards to contamination under the road.

742.1015c: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015d: The property owner will comply with this requirement.

742.1015e: The property owner will comply with this requirement upon receipt of approval of the proposed GROs and SROs from the IEPA.

742.1015f: No MOU has been entered into and is not required per IEPA. See demonstration of compliance with 742.1015a.

742.1015g: The property owner will comply with this requirement upon receipt of the No Further Remediation Letter from the IEPA.

742.1015h: DAI concurs that the three (3) items detailed will be grounds for voidance of the NFR letter.

742.1015i: No MOU is required per IEPA. See demonstration of compliance with 742.1015a.

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APPENDIX D
ENGINEERED BARRIER COMPLIANCE DEMONSTRATION

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The following demonstrates that the engineered barrier is in compliance with 35 IAC 742.1105.

742.1105a:	The engineered barrier is not natural attenuation, access control, or a point of use treatment. Direct human exposure to groundwater will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.
742.1105b:	The engineered barrier is used in conjunction with a Tier 2 determination of remediation objectives.
742.1105c (1):	The soil component of the groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.
742.1105c (2):	The soil ingestion exposure route will be eliminated through an asphalt cap.
742.1105c (3):	The soil inhalation exposure route will be eliminated through an asphalt cap.
742.1105c (4):	The groundwater ingestion exposure route will be eliminated through implementation of the Village of Lyons Ordinance Number 5-18-99-3 as an institutional control.

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APPENDIX E
PHOTOGRAPHS

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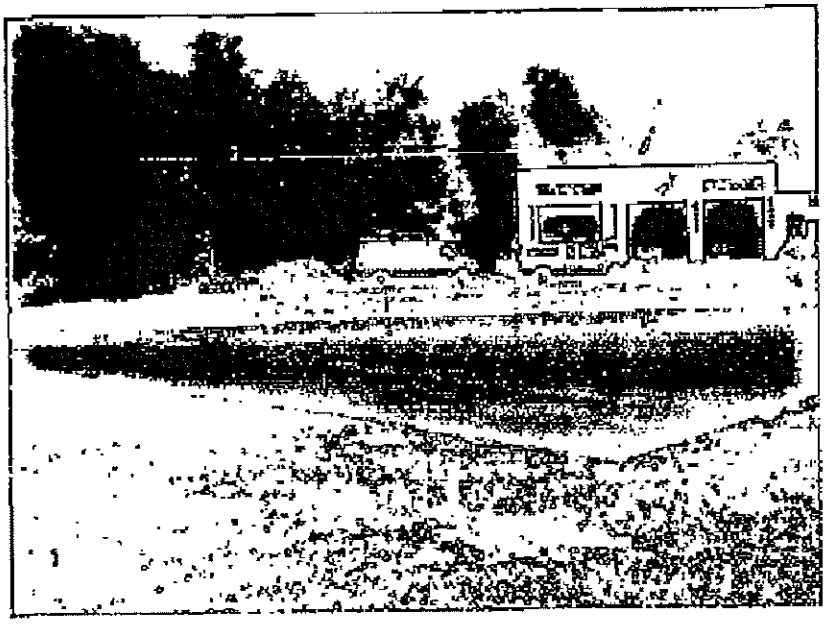
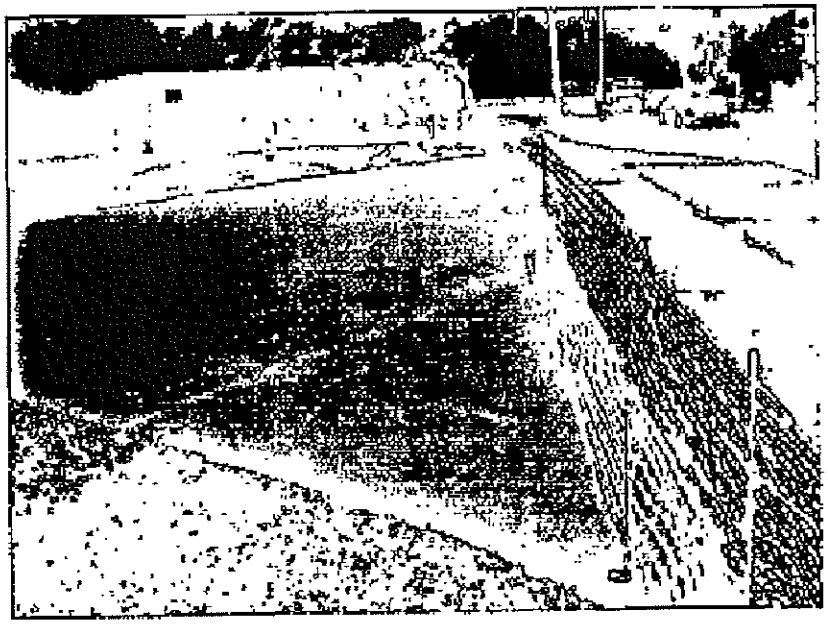
PHOTO #1



NORTHERN ENGINEERED BARRIER (TRIANGLE PAD)

PHOTO #2



NORTHERN ENGINEERED BARRIER (TRIANGLE PAD)

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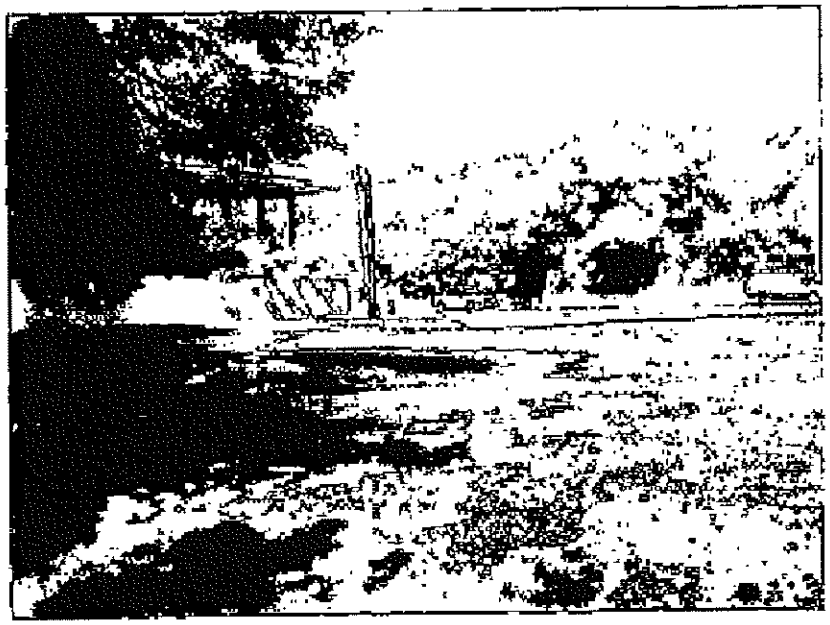
PHOTO # 3

EASTERN ASPHALT ENGINEERED BARRIER (RECTANGLE PAD)

PHOTO # 4



PROPERTY WITH BOTH ASPHALT BLACKTOP PADS

APPENDIX F
PROFESSIONAL ENGINEER CERTIFICATION

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This page can be completed online.

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement, or representation in any label, manifest, record, report, permit, application, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction is punishable as a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Professional Engineer Certification

A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale/Ogden)

Site Address (not a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

B. Certification

The release from the underground storage tank system(s) identified by the above-referenced incident number at the above-referenced site has been remediated in accordance with 35 Ill. Adm. Code, Part [ ] 731, [x] 732 or [ ] 415 ILCS 5/57-57.17 (includes Public Act 92-0554) and other applicable rules and regulations. The remedial activities are described in the Corrective Action Completion Report dated 7/29/99 and 9/19/03. The remediation has achieved the objectives set forth by the Agency in:

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35 Ill. Adm. Code Part 742 X

Site Specific Cleanup Objectives approved by the Agency in the letter dated _____ ____

I certify under penalty of law that the Corrective Action Completion Report, supporting documents and all attachments were prepared under my direction or supervision or were reviewed by me. To the best of my knowledge and belief, the attached Corrective Action Completion Report, supporting documents and all attachments are true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of the fine and imprisonment for knowing violations.

Professional Engineer

Name: Richard J. Vamos

Firm: DAI Environmental, Inc.

Address: 27834 N Irma Lee Circle

City, State, ZIP: Lake Forest, IL 60045

Phone: 847-573-6900

Ill. Registration No.: 062-049136

License Expiration Date: 11/20/05

Signature: [signature]

Date: 2-18-04

P.E. Seal

RICHARD J. VAMOS
062-049136
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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APPENDIX G
OWNER/OPERATOR SUMMARY PAGE

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This page can be completed online.

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in the Agency's inability to issue a No Further Remediation letter under Title XVI. Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Owner/Operator Property Summary

A. Site Identification

IEMA Incident #: 951401 IEPA LPC# (10-digit): 0311715020

Site Name: Material Service Corp - Yard 18 (Lawndale Odgen)

Site Address (No a P.O. Box): 4226 South Lawndale Avenue

City: Lyons County: Cook ZIP Code: 60534-1199

LUST Technical File

Engineered barriers, institutional controls and other use restrictions, if any, proposed for this site may not be implemented without approval by the title holder(s) of record for the above-referenced property, or the agent(s) of such person(s). These controls and restrictions will be identified in the No Further Remediation letter, which must be recorded in the chain of title for the property. Failure to maintain these controls is grounds for voidance of the NFR letter.

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B. Proposed Institutional Controls and Use Restrictions

The following controls and restrictions are proposed for the above referenced site:

- [x] Industrial/Commercial land use limitation;
- [ ] On-site groundwater restriction prohibiting the use of groundwater beneath the site as a potable water supply;
- [x] An engineered barrier: ☐ building, ☒ asphalt/concrete, or ☐ other *(description)* _____;
- [x] Groundwater use restriction ordinance: ☐ with a MOU, ☒ without a MOU;
- [ ] Construction Worker caution notification;
- [x] Other: Highway Authority Agreement
- [ ] None (there are no proposed institutional controls, etc.)

C. Identification of Property Ownership

Indicate which statement below is applicable to this site.

- [x] The title holder of record for the property identified in Section A above is the owner and/or operator of the underground storage tank(s) (complete paragraphs D and F).

☐ The title holder of record for the property identified in Section A above is not the underground storage tank owner or operator (complete paragraphs E and F).

D. Underground Storage Tank Owner/Operator Declaration

I hereby propose to place the restriction(s) and/or institutional controls identified in Section B above on the property identified in Section A above. I certify that I am the owner and/or operator of the underground storage tank(s) that are or were located at the above referenced property and that I am the title holder of record for the property or the agent of such title holder of record. If the title holder of record is not a natural person, I further certify that, as agent, I have the authority to approve the placement of the proposed institutional controls and restriction(s) on the property.

Name of Property Owner: Material Service Corp
Name of Officer or Agent: Gary O'Toole
Mailing Address: 4226 South Lawndale Avenue
City, State, ZIP Code: Lyons, IL 60534-1199
Signature: Gary W O'Toole Date: 2-11-04

E. Property Ownership Declaration

I hereby certify that I have reviewed the attached report and that I accept the terms and conditions set forth therein, including any land use limitations, that apply to property I own. I further certify that I have no objection to the recording of a No Further Remediation Letter containing the terms and conditions identified in the Corrective Action Completion Report.

Name of Property Owner: _____
Name of Officer or Agent: _____
Mailing Address: _____
City, State, ZIP Code: _____
Signature: _____ Date: _____

F. Site Description

Real Estate Tax/Parcel Index Number: 18-02-207-004
Legal Description of Site (may be provided on a separate sheet):
See Appendix H for Description

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APPENDIX H
PLAT OF SURVEY AND LEGAL DESCRIPTION

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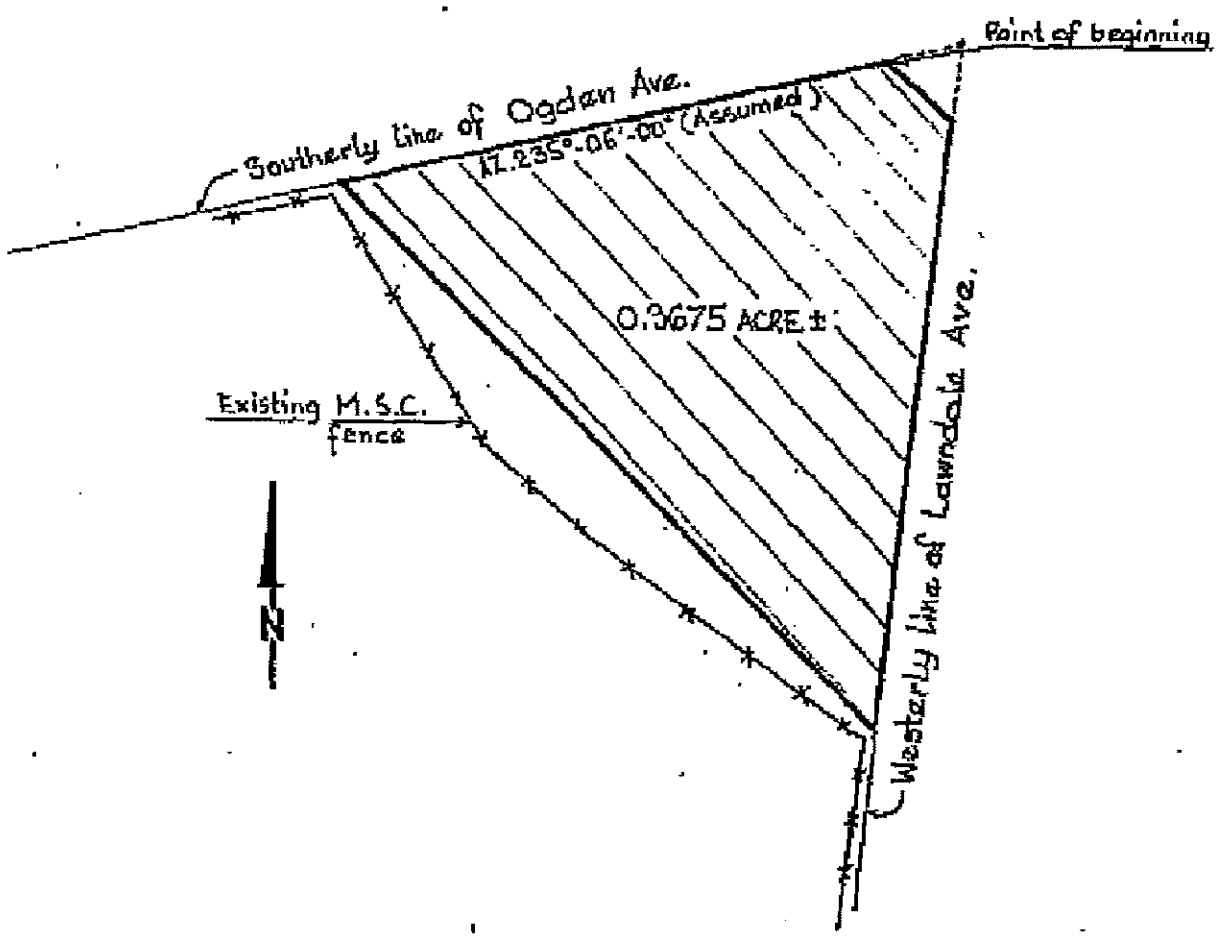
Date: December 8,1997
Prepared by: L.Musini

LEGAL DESCRIPTION
of portion M.S.C. parcel code #139

That part of NE quarter of Section 2, Township 38N, Range 12E of the Third Principal Meridian, in Cook County, Illinois bounded and described as follows:

Commencing at the point of intersection of the westerly line of Lawndale Ave. with the southerly line of Ogden Ave., and going westerly with assumed azimuth 235 06'00" for a distance of 20.00 feet to a point of beginning;
thence continue with said azimuth 235 06'00" along westerly line of Lawndale Ave. for a distance of 158.44 feet; thence southeasterly with azimuth 110 34'08" for a distance of 220.56 feet; thence northwesterly with azimuth 341 29'59" for a distance of 169.17 feet; thence northwesterly with azimuth 288 22'01" for a dist. of 23.99 feet to a point of beginning, containing 0.3675 acre, more or less.



Material Service Corporation
A GENERAL DYNAMICS COMPANY

VIA CERTIFIED MAIL

4 May 2006

0311715020 Cook
Material Service
LUST Tech

Mr. Michael T. Lowder, Unit Manager
Illinois Environmental Protection Agency
Leaking Underground Storage Tank Section
Division of Remediation Management
P.O. Box 19276
Springfield, IL 62794-9276

Re: NFR -- REVISED RECORDED LETTER SUBMISSION
LUST Incident No.: 951401

Dear Mr. Lowder,

Attached is a copy of the documents filed with the Recorder's office on April 3, 2006. The delay was a result of that fact that we are no longer the owner of record and the current owners needed time to review the documents.

All releases relative to Incident Number 951401 are now closed.

Should you have any questions, please contact Ms. Mary Anne Hunter of my staff at 312/443-7128.

Sincerely,

Mary Anne Hunter
Gary O'Toole for
Director, Environmental Services

RECORDED
NFR

Co: Mary Anne Hunter

RELEASABLE
MAY 15 2006
REVIEWER MD

RECEIVED
MAY 11 2006
IEPA/BOL

Environmental Services Department
4225 S. Lawndale Avenue
Lyons, IL 60534-1190
Tel 312 443 7103
Fax 312 443 7141
gotoole@material-service.com

PREPARED BY:

Name: Material Service Corporation

Address: 4226 South Lawndale Avenue
Lyons, Illinois 60534-1199

Doc#: 0600345104 Fee: $54.50
Eugene "Gene" Moore
Cook County Recorder of Deeds
Date: 04/03/2006 02:08 PM Pg: 1 of 18

RETURN TO:

Name: Material Service Corporation
Attention: Mr. Gary O'Toole

Address: 4226 South Lawndale Avenue
Lyons, Illinois 60534-1199

(THE ABOVE SPACE FOR RECORDER'S OFFICE)

LEAKING UNDERGROUND STORAGE TANK ENVIRONMENTAL NOTICE

THE OWNER AND/OR OPERATOR OF THE LEAKING UNDERGROUND STORAGE TANK SYSTEM(S) ASSOCIATED WITH THE RELEASE REFERENCED BELOW, WITHIN 45 DAYS OF RECEIVING THE NO FURTHER REMEDIATION LETTER CONTAINING THIS NOTICE, MUST SUBMIT THIS NOTICE AND THE REMAINDER OF THE NO FURTHER REMEDIATION LETTER TO THE OFFICE OF THE RECORDER OR REGISTRAR OF TITLES OF COOK COUNTY IN WHICH THE SITE DESCRIBED BELOW IS LOCATED.

Illinois EPA Number: 0311715020
LUST Incident No.: 951401
Material Service Corporation, the owner and/or operator of the leaking underground storage tank system(s) associated with the above-referenced incident, whose address is 4226 South Lawndale Avenue, Lyons, Illinois, has performed investigative and/or remedial activities for the site identified as follows:

1. Legal Description or Reference to a Plat Showing the Boundaries: Both the legal description for the Haffner Site and the Lawndale Ogden Site are attached.
2. Common Address: 4226 South Lawndale Avenue, Lyons, Illinois
3. Real Estate Tax Index/Parcel Index Number: 18-02-304-018 (Haffner Site) and 18-02-207-004 (Lawndale Ogden Site)
4. Site Owner: Material Service Corporation
5. Land Use Limitation: The land use shall be industrial/commercial (Lawndale Ogden Site).
6. See the attached No Further Remediation Letter for other terms.

mh

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MAY 15 2006
REVIEWER MD

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MAY 11 2006
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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/782-6762

CERTIFIED MAIL

FEB 1 6 2006

7004 2510 0001 6654 2012

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FEB 2 1 2006

ENVIRONMENTAL SERVICES

Material Service Corp.
Attention: Mr. Gary O'Toole
4226 South Lawndale Ave.
Lyons, IL 60534

Re: LPC # 0311715020 – Cook County
Lyons / Material Service Corp
4226 South Lawndale
LUST Incident No. 951401 – Haffner & Lawndale / Ogden
LUST Technical File

Dear Mr. O'Toole:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Completion Report submitted for the above-referenced incident. This information is dated November 17, 2005 and was received by the Illinois EPA on November 18, 2005. Citations in this letter are from the Environmental Protection Act (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code).

The High Priority Corrective Action Completion Report and associated Professional Engineer Certification indicate corrective action for the above-referenced site was conducted in accordance with the Corrective Action Plan approved by the Illinois EPA. The Corrective Action Completion Report demonstrates that the requirements of Section 57.7(c)(1)(E) of the Act and 35 Ill. Adm. Code 732.409(a)(2) have been satisfied.

Based upon the certifications by Messrs Christopher Cailles and Richard J. Vamos, Licensed Professional Engineers, and pursuant to Section 57.10 of the Act (415 ILCS 5/57.10), your request for a no further remediation determination is granted under the conditions and terms specified in this letter. It is understood that LUST Incident No. 951401 was issued for both the Haffner site and the Lawndale Ogden site; therefore, this No Further Remediation Letter is being issued for both sites. Please refer to the attached Site Diagram for the specific location of these sites.

Issuance of this No Further Remediation Letter (Letter), based on the certification of the Licensed Professional Engineers, signifies that: (1) all statutory and regulatory corrective action requirements applicable to the occurrence have been complied with; (2) all corrective action

concerning the remediation of the occurrence has been completed; and (3) no further corrective action concerning the occurrence is necessary for the protection of human health, safety, and the environment. Pursuant to Section 57.10(d) of the Act, this Letter shall apply in favor of the following parties:

1. Material Service Corporation, the owner or operator of the underground storage tank system(s).

2. Any parent corporation or subsidiary of such owner or operator.

3. Any co-owner or co-operator, either by joint tenancy, right-of-survivorship, or any other party sharing a legal relationship with the owner or operator to whom the Letter is issued.

4. Any holder of a beneficial interest of a land trust or inter vivos trust whether revocable or irrevocable.

5. Any mortgagee or trustee of a deed of trust of such owner or operator.

6. Any successor-in-interest of such owner or operator.

7. Any transferee of such owner or operator whether the transfer was by sale, bankruptcy proceeding, partition, dissolution of marriage, settlement or adjudication of any civil action, charitable gift, or bequest.

8. Any heir or devisee of such owner or operator.

This Letter and all attachments, including but not limited to the Leaking Underground Storage Tank Environmental Notice, must be filed within 45 days of receipt as a single instrument with the Office of the Recorder or Registrar of Titles in the county in which the above-referenced site is located. In addition, the Groundwater Ordinance (photocopy attached) must be filed as an attachment of this Letter with the Office of the Recorder or Registrar of Titles of the applicable county. This Letter shall not be effective until officially recorded by the Office of the Recorder or Registrar of Titles of the applicable county in accordance with Illinois law so it forms a permanent part of the chain of title for the above-referenced property. Within 30 days of this Letter being recorded, an accurate and official copy of this Letter, as recorded, shall be obtained and submitted to the Illinois EPA. For recording purposes, it is recommended that the Leaking Underground Storage Tank Environmental Notice of this Letter be the first page of the instrument filed.

CONDITIONS AND TERMS OF APPROVAL

LEVEL OF REMEDIATION AND LAND USE LIMITATIONS

1. The remediation objectives for the Haffner portion of the above-referenced site, more particularly described in the Leaking Underground Storage Tank Environmental Notice of this Letter, were established in accordance with the requirements of the Tiered Approach to Corrective Action Objectives (35 Ill. Adm. Code 742) rules.

   The remediation objectives for the Lawndale Ogden portion of the above-referenced site have been established in accordance with an industrial/commercial land use limitation. The remediation objectives for the above-referenced site, more particularly described in the Leaking Underground Storage Tank Environmental Notice of this Letter, were established in accordance with the requirements of the Tiered Approach to Corrective Action Objectives (35 Ill. Adm. Code 742) rules.

2. As a result of the release from the underground storage tank system(s) associated with the above-referenced incident, the above-referenced site, more particularly described in the attached Leaking Underground Storage Tank Environmental Notice of this Letter, shall not be used in a manner inconsistent with the following land use limitation: For the Haffner site, there are no land use limitations. For the Lawndale Ogden site, the land use shall be industrial/commercial.

3. The land use limitation specified in this Letter may be revised if:

   a. Further investigation or remedial action has been conducted that documents the attainment of objectives appropriate for the new land use; and

   b. A new No Further Remediation Letter is obtained and recorded in accordance with Title XVII of the Act and regulations adopted thereunder.

PREVENTIVE, ENGINEERING, AND INSTITUTIONAL CONTROLS

4. Preventive: Prior to commencement of any future excavation and/or construction in or near the contaminated zone of the Lawndale Ogden site, a safety plan for this remediation site is required that is consistent with National Institute for Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities; Occupational Safety and Health Administration regulations, particularly in 29 CFR 1910 and 1926; state and local regulations; and other U.S. EPA guidance as provided. At a minimum, the plan should address possible worker exposure if any future excavation and construction activities occur within the contaminated soil.

   Engineering: An asphalt barrier that is sufficient in thickness to inhibit the inhalation and ingestion of the contaminated media must remain over the contaminated

soil at the Lawndale Ogden site outlined in the attached Site Base Map. This asphalt barrier is to be properly maintained as an engineered barrier to inhibit inhalation and ingestion of the contaminated media.

Institutional: This Letter shall be recorded as a permanent part of the chain of title for the above-referenced site, more particularly described in the attached Leaking Underground Storage Tank Environmental Notice of this Letter.

Highway Authority Agreement

Illinois Department of Transportation agrees, through the use of a Highway Authority Agreement, to allow contaminated groundwater and/or soil to remain beneath its highway right-of-way adjacent to the site located at 4226 South Lawndale Avenue, Lyons, Illinois (specifically, the southwest corner of the intersection of Lawndale and Ogden Avenues in Lyons, Illinois), as shown on the attached map, contamination will remain in the right-of-way for both Lawndale Ave. and Ogden Ave. The Highway Authority agrees to: (a) prohibit the use of groundwater under the highway right-of-way that is contaminated above Tier 1 groundwater remediation objectives as a potable or other domestic supply of water, and (b) limit access to soil contamination under the highway right-of-way that is contaminated above residential Tier 1 soil remediation objectives.

A copy of the Highway Authority Agreement can be obtained through a written request under the Freedom of Information Act (5 ILCS 140) to the Bureau of Land, FOIA Unit as detailed elsewhere in this Letter. Questions regarding the Highway Authority Agreement should be directed to:

John P. Kos, District Engineer
201 W. Center Court
Schaumburg, Illinois 60196
Phone: 847/705-4110

Groundwater Use Ordinance

Ordinance 5-18-99-3 adopted by the Village of Lyons, Illinois effectively prohibits the installation of potable water supply wells (and the use of such wells) and is an acceptable institutional control under the following conditions:

a. The current owner or successor-in-interest of this site who relies on this ordinance as an institutional control shall:

i. Monitor activities of the unit of local government relative to variance requests or changes in the ordinance relative to the use of potable groundwater at this remediation site; and

ii. Notify the Illinois EPA of any approved variance requests or ordinance changes within thirty (30) days after the date such action has been approved.

b. Each affected property owner, potentially affected property owner (as identified through contaminant modeling), and the Village of Lyons must receive written notification from the owner or operator desiring to use the ordinance as an institutional control that groundwater remediation objectives have been approved by the Illinois EPA. Written proof of this notification shall be submitted to the Illinois EPA in accordance with 35 Ill. Adm. Code 742.1015(b) and (c) within 45 days from the date this Letter is recorded. The notification shall include:

i. The name and address of the unit of local government;

ii. The citation of the ordinance used as an institutional control in this Letter;

iii. A description of the property being sent notice by adequate legal description or by reference to a plat showing the boundaries;

iv. A statement that the ordinance restricting the groundwater use was used by the Illinois EPA in reviewing a request for groundwater remediation objectives;

v. A statement as to the nature of the release and response action with the name, address, and Illinois EPA inventory identification number; and

vi. A statement as to where more information may be obtained regarding the ordinance.

The following activities shall be grounds for voidance of the ordinance as an institutional control and this Letter:

a. Modification of the referenced ordinance to allow potable uses of groundwater.

b. Approval of a site-specific request, such as a variance, to allow use of groundwater at the site.

c. Violation of the terms of a recorded institutional control.

5. Failure to establish, operate, and maintain controls in full compliance with the Act, applicable regulations, and the approved Corrective Action Plan, if applicable, may result in voidance of this Letter.

OTHER TERMS

6. Any contaminated soil or groundwater removed or excavated from, or disturbed at, the above-referenced site, more particularly described in the Leaking Underground Storage Tank Environmental Notice of this Letter, must be handled in accordance with all applicable laws and regulations under 35 Ill. Adm. Code Subtitle G.

7. Further information regarding the above-referenced site can be obtained through a written request under the Freedom of Information Act (5 ILCS 140) to:

Illinois Environmental Protection Agency
Attention: Freedom of Information Act Officer
Bureau of Land - #24
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

8. Pursuant to 35 Ill. Adm. Code 732.704, should the Illinois EPA seek to void this Letter, the Illinois EPA shall provide notice to the owner or operator of the leaking underground storage tank system(s) associated with the above-referenced incident and the current title holder of the real estate on which the tanks were located, at their last known addresses. The notice shall specify the cause for the voidance, explain the provisions for appeal, and describe the facts in support of the voidance. Specific acts or omissions that may result in the voidance of this Letter include, but shall not be limited to:

a. Any violation of institutional controls or industrial/commercial land use restrictions;

b. The failure to operate and maintain preventive or engineering controls or to comply with any applicable groundwater monitoring plan;

c. The disturbance or removal of contamination that has been left in-place in accordance with the Corrective Action Plan or Completion Report;

d. The failure to comply with the recording requirements for the Letter;

e. Obtaining the Letter by fraud or misrepresentation; or

f. Subsequent discovery of contaminants, not identified as part of the investigative or remedial activities upon which the issuance of the Letter was based, that pose a threat to human health or the environment.

Submit an accurate and official copy of this Letter, as recorded, to:

Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

If you have any questions or need further assistance, please contact the Illinois EPA project manager, Michael A. Heaton, at 217/524-3312.

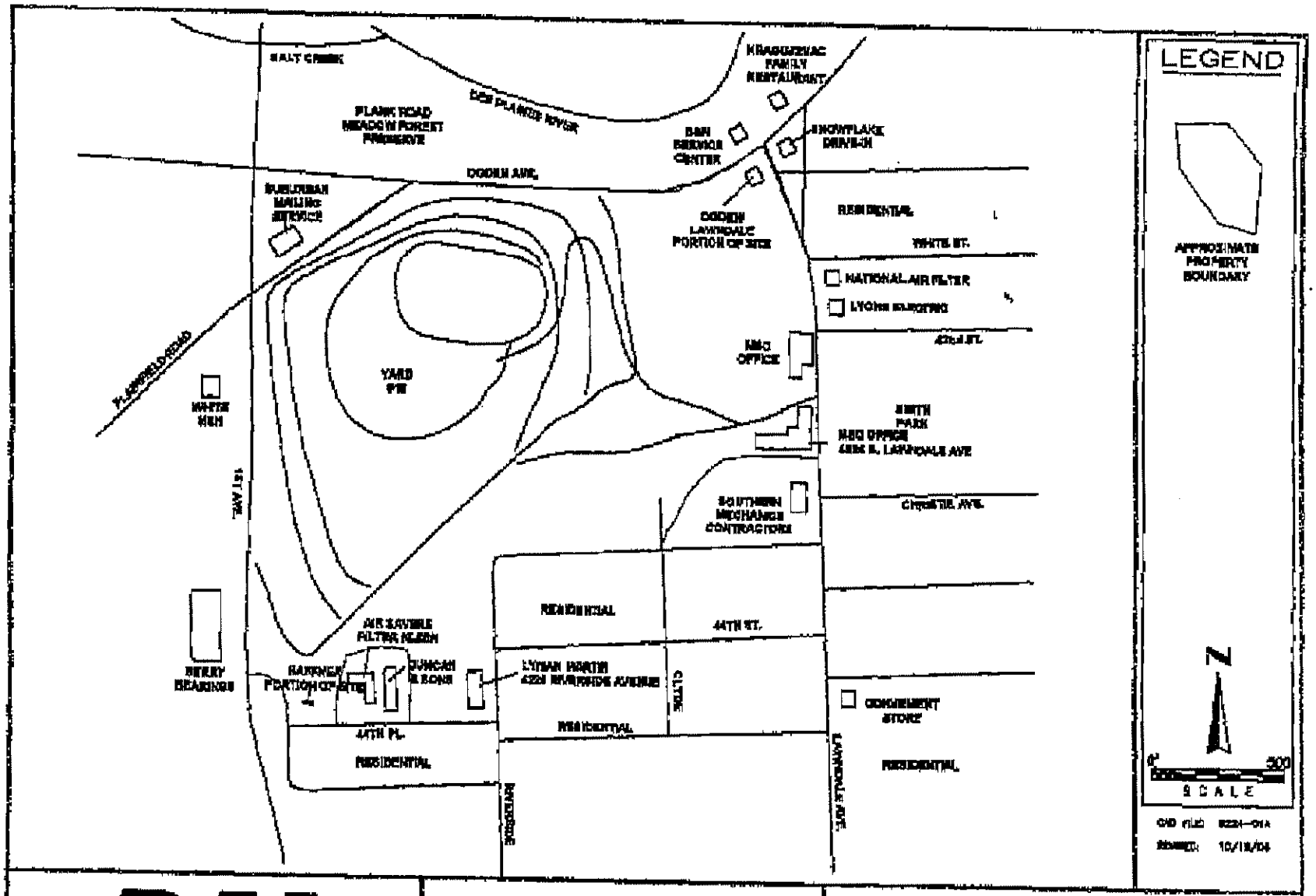
Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Mangement
Bureau of Land

MTL:mh\95140119.doc

Attachments: Leaking Underground Storage Tank Environmental Notice
Site Diagram depicting location of Hafner Site and Lawndale Ogden Site
Legal Description for Haffner Site
Legal Description for Lawndale Ogden Site
Groundwater Ordinance for Village of Lyons
Diagram depicting area covered by the Highway Authority Agreement
Diagram depicting area covered by engineered barrier (Lawndale Ogden Site)

cc: Mr. Christopher Cailles, PE – DAI Environmental (Lake Forest, Illinois)
Division File



ENVIRONMENTAL DAI

MATERIAL SERVICE CORP - YARD 19
HAFFNER PORTION OF SITE
LYONS, ILLINOIS

FIGURE 1A
AREA MAP

LEGAL DESCRIPTION

Property Leased to Baja Company

That part of Southwest Quarter of Section 2, Township 38 North, Range 12 East of The Third Principal Meridian described as follows:
Commencing at the point of intersection of the North R.O.W. line of 44th Place and the East R.O.W. line of 1st Avenue, thence East along said North R.O.W. line with assumed bearing N 89°59'52"E for a distance of 108.12 ft. to the Point of Beginning:
thence N 0°06'21"E, a distance of 135.00 ft.; thence N 79°30'24"E, a distance of 137.00 ft.; thence N 72°48'22"E, a distance of 100.00 ft.; thence N 89°59'52"E, a distance of 100.00 ft.; thence S 0°09'03"W, a distance of 189.50 ft.; thence S 89°59'52"W, a distance of 329.99 ft. to the Point of Beginning; containing 1.27 acres more or less, all in Lyons Township, Cook County, Illinois.

NO.	DESCRIPTION	BY	DATE

REVISIONS
DESTROY ALL PRINCIPLE PRINTS

RELEASED FOR CONSTRUCTION
APPROVED FOR CONSTRUCTION

MATERIAL SERVICE CORPORATION

LYONS QUARRY - YARD 18
BAJA LEASE AREA

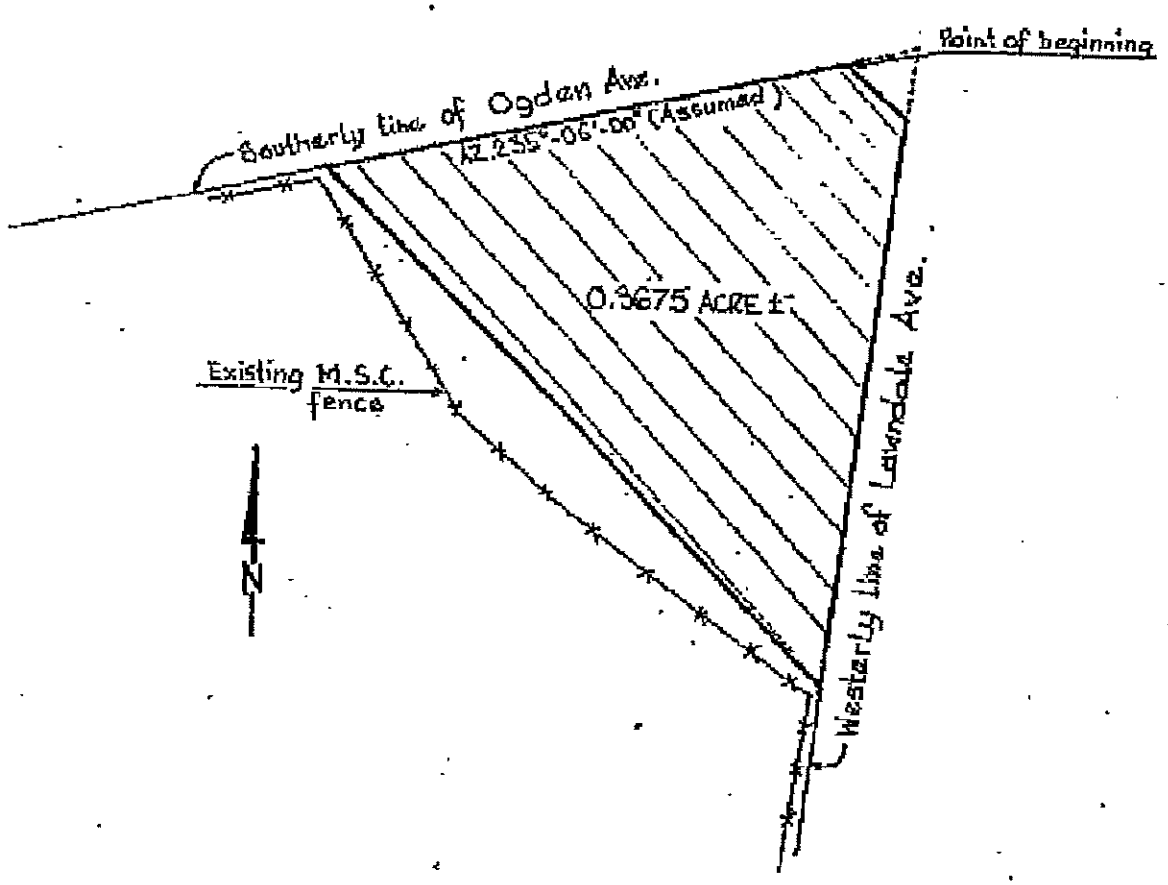
SCALE 1" = 100'-0"
DRAWN L. Mungo
DATE 28 Oct 2002
ACTUAL FILE No. 18OCT2002
DWG No. 18363

Date: December 8,1997
Prepared by: L.Muciol

LEGAL DESCRIPTION
of portion M.S.C. parcel code #139

That part of NE quarter of Section 2, Township 38N, Range 12E of the Third Principal Meridian, in Cook County, Illinois bounded and described as follows:

Commencing at the point of intersection of the westerly line of Lawndale Ave. with the southerly line of Ogden Ave., and going westerly with assumed azimuth 235 06'00" for a distance of 20.00 feet to a point of beginning; thence continue with said azimuth 235 06'00" along westerly line of Lawndale Ave. for a distance of 158.44 feet; thence southeasterly with azimuth 118 34'08" for a distance of 220.56 feet; thence northwesterly with azimuth 341 29'59" for a distance of 165.17 feet; thence northwesterly with azimuth 286 22'01" for a dist. of 23.99 feet to a point of beginning, containing 0.3675 acre, more or less.



VILLAGE OF LYONS

ORDINANCE NO. 5-18-99-3

AN ORDINANCE AMMENDING VILLAGE ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2 WHICH PROHIBITS WELLS FOR POTABLE WATER SUPPLY

ADOPTED BY THE PRESIDENT
AND BOARD OF TRUSTEES
OF THE
VILLAGE OF LYONS

THIS 18TH DAY OF MAY, 1999

Published in pamphlet form by the authority of the President and Board of Trustees of the Village of Lyons, Cook County, Illinois this 18th day of May, 1999

ORDINANCE NO. [illegible]

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS THE USE OF GROUNDWATER SUPPLY BY THE INSTALLATION
OR USE OF POTABLE WATER WELLS OR ANY OTHER

WHEREAS, certain properties in the Village of Lyons, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class I groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 residential remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the Village of Lyons desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of Properties that are the source of said chemical constituents;

NOW, THEREFORE BE IT ORDAINED BY THE VILLAGE BOARD OF THE CITY VILLAGE OF LYONS:

Section One. Article 7, Chapter 4, Section 2 of the ordinances of the Village of Lyons is repealed and replaced in its entirety by the following:

7-4-2. Use of groundwater as a potable water supply is prohibited.
The use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation or drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons.

A. Penalties.
Any person violating the Provisions of this ordinance shall be subject to a fine of up to $750.00 for each violation.

B. Definitions.
Person is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.
Potable water is any water used for human or domestic consumption including but not limited to, water used for drinking, bathing, swimming, washing dishes or preparing foods.

Memorandum of Understanding. The President of the Village of Lyons is hereby authorized and directed to enter into a Memorandum of Understanding with the Illinois Environmental Protection Agency (Illinois EPA) in which the Village assumes responsibility for tracking remediated sites, notifying the Illinois EPA of changes to this ordinance and taking certain precautions when siting public potable water supply wells.

Section Two: Severability. If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Three: Effective Date. This ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law.

PASSED THIS 18th DAY OF MAY, 1999

AYES: 5

NAYS: 0

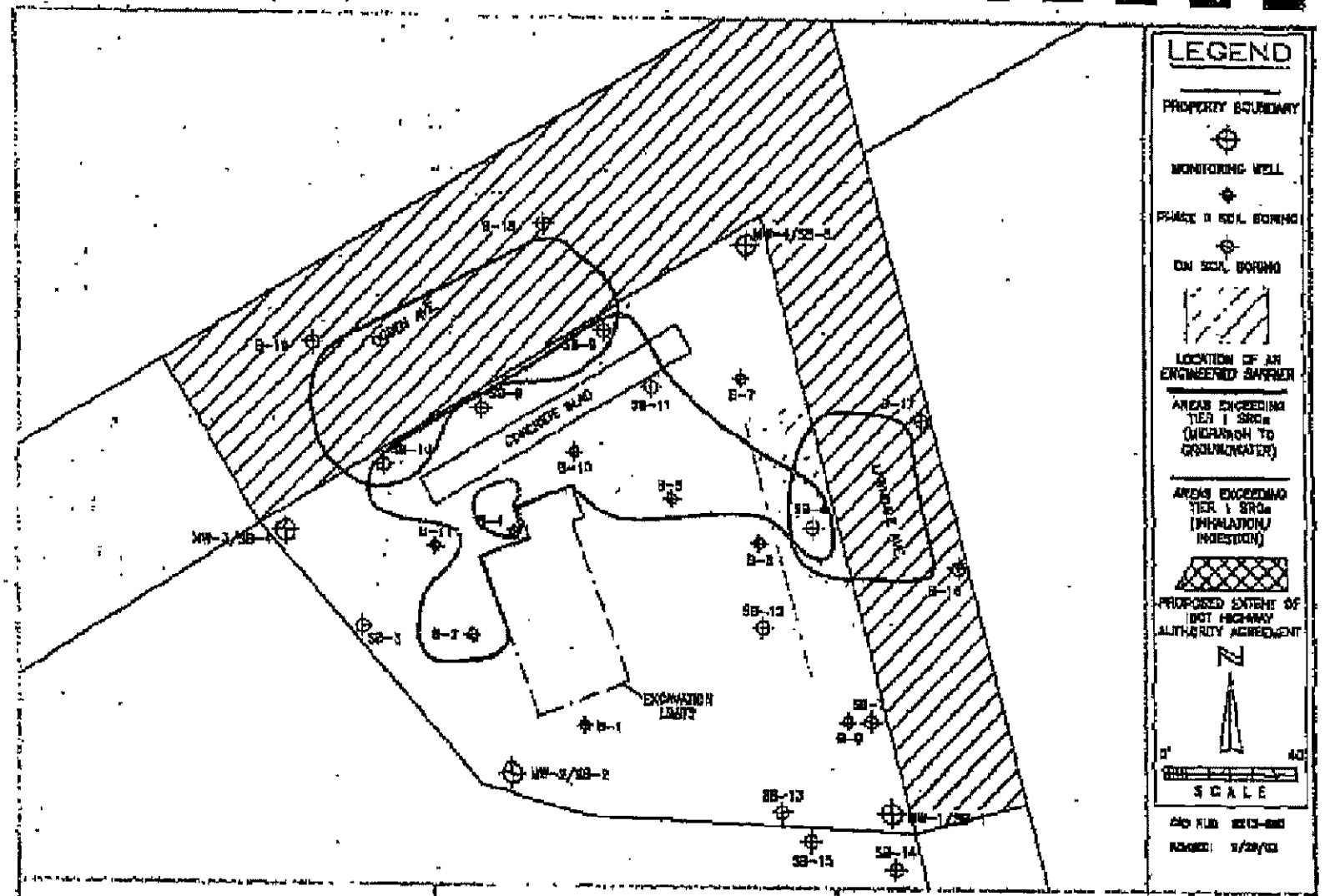
ABSENT: One (Trustee TVROIK)

APPROVED THIS 18th DAY
OF MAY, 1999

David A. Visk
Village President

ATTEST:

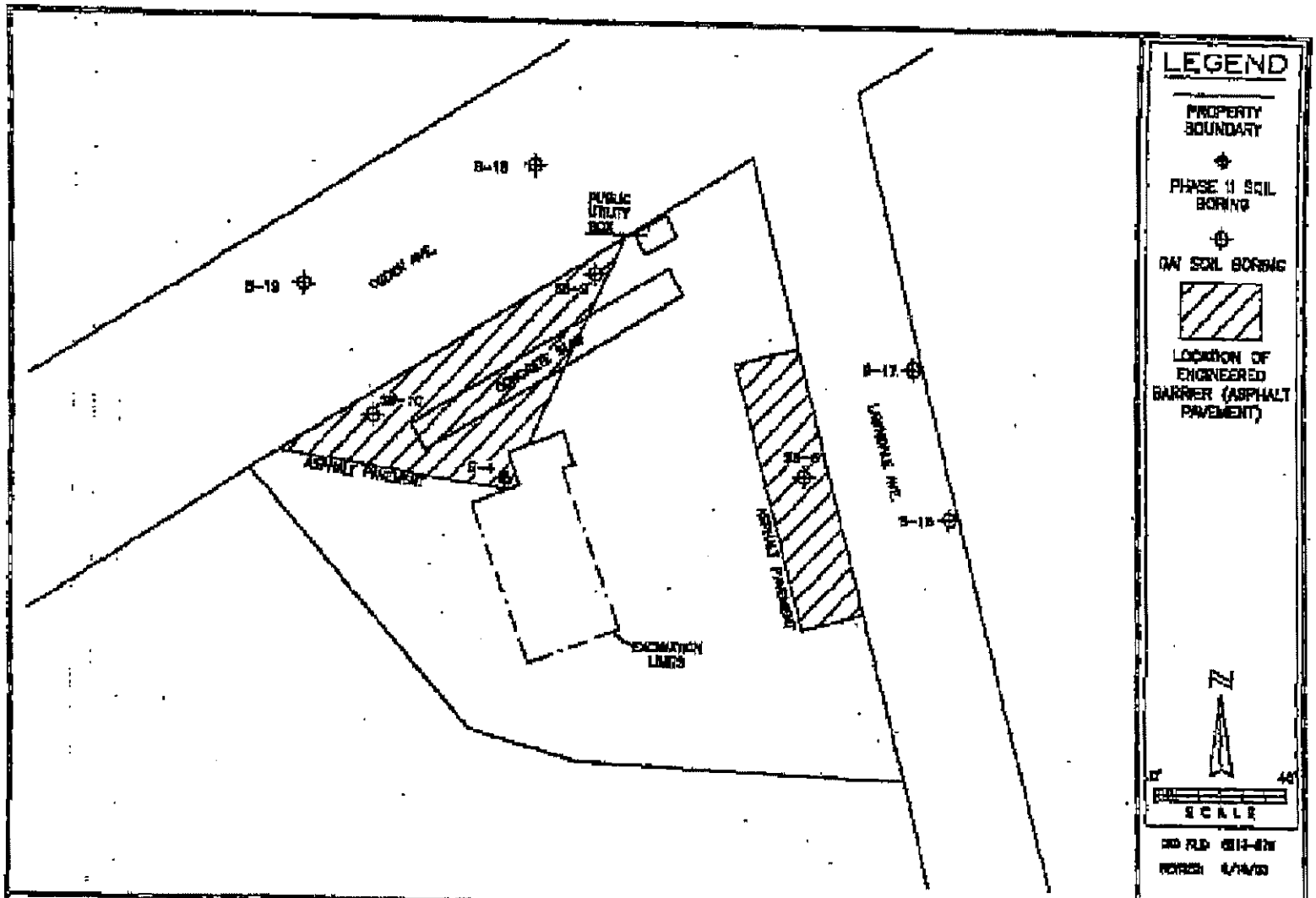
William J. Polich, C.M.C.
Village Clerk



ENVIRONMENTAL DAI

MSC YARD 16
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 2
AREA OF PROPOSED IDOT
HIGHWAY AUTHORITY AGREEMENT



ENVIRONMENTAL DAI

MSC YARD 16
4226 SOUTH LAWNDALE AVENUE
LYONS, ILLINOIS

FIGURE 3
ENGINEERED BARRIER LOCATIONS

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APPENDIX H

BB&J PHASE II ESA: COMMERCIAL DEVELOPMENT

June 13, 2007

Village of Lyons c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Subject: **Report of Phase II Environmental Site Assessment Strategy and Sampling – Commercial Development Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois BB&J Project No. 0253801**

Dear Mr. Bush:

Bradburne, Briller & Johnson, LLC (BB&J) is pleased to submit the Village of Lyons this *Report of Phase II Environmental Site Assessment* for the parcel of land located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property). This project was performed in accordance with the scope of work outlined in BB&J Proposal No. PN7-0109.

We appreciate the opportunity to provide you with our environmental consulting services. If you have any questions or require additional information, please call.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

Karen Beaman
Staff Scientist

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P.G.
Principal

515 N. State Street, Suite 2200, Chicago, Illinois
Voice 312.644.8556 Fax 312.644.8555
www.bbjgroup.com

REPORT OF
PHASE II ENVIRONMENTAL SITE ASSESSMENT

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Submitted to:

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
Chicago, Illinois

Prepared by:

BRADBURNE, BRILLER & JOHNSON, LLC
Chicago, Illinois

June 13, 2007

TABLE OF CONTENTS

1.0 BACKGROUND 1

2.0 OBJECTIVE 1

3.0 SUBSURFACE ASSESSMENT 1
- 3.1 Pre-Mobilization Activities 1
- 3.2 Soil Gas Survey 2
- 3.3 Subsurface Soil Investigation 3
- 3.4 Ground-Water Investigation 5

4.0 FINDINGS AND ANALYTICAL RESULTS 5
- 4.1 Subsurface Geology and Hydrogeology 5
- 4.2 Field Screening Results 6
- 4.3 Laboratory Analytical Results 6
  - 4.3.1 Soil Gas 7
  - 4.3.2 Soil Investigation 7
  - 4.3.3 Ground Water 10
  - 4.3.4 QA/QC 11

5.0 CONCLUSIONS AND RECOMMENDATIONS 11
- 5.1 Soil Gas Survey 11
  - 5.1.1 Johnson and Ettinger Calculations 11
  - 5.1.2 Proposed Commercial Buildings 12
  - 5.1.3 Soil Gas Conclusions 13
- 5.2 Subsurface Soil Investigation 15
  - 5.2.1 Ground Water 16

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results
Table 2: Summary of Soil Laboratory Analytical Results
Table 3: Summary of Ground-Water Analytical Results
Table 4: Monitoring Well Construction and Development Data
Table 5: Monitoring Well and Ground-Water Elevation Data

TABLE OF CONTENTS (continued)

FIGURES

Figure 1: Site Location Map
Figure 2: Soil Boring, Monitoring Wells, and Soil Gas Locations
Figure 3: Ground-Water Potentiometric Map
Figure 4: Monitoring Well Diagrams

APPENDICES

Appendix A: Field Procedures
Appendix B: Soil Boring Logs
Appendix C: Laboratory Analytical Reports
Appendix D: Village of Lyons Ordinance 5-18-99-3

1.0 BACKGROUND

BB&J performed a Phase II environmental Site Assessment (Phase II ESA) for the parcel of land located on the southwest corner of Ogden and Lawndale Avenues in Lyons, Illinois (Subject Property). A site location map is provided as Figure 1.

During a previous soil gas investigation, BB&J identified locations where elevated concentrations of methane and various volatile organic compounds (VOCs) were detected, including (but not limited to) vinyl chloride, trichloroethylene, and gasoline-related constituents. This previous investigation was conducted to assist with the evaluation of possible development options for the Subject Property. BB&J understands that a portion of the Subject Property along Ogden Avenue, which was the subject of this investigation, is intended for redevelopment for commercial purposes.

2.0 OBJECTIVE

The objective of this project was to help evaluate management and construction considerations to address environmental conditions related to the redevelopment of the Subject Property for commercial purposes.

3.0 SUBSURFACE ASSESSMENT

The following sections present a summary of the subsurface assessment activities conducted for the Subject Property. Details of the subsurface assessment activity procedures are presented within the Field Procedures (Appendix A).

3.1 Pre-Mobilization Activities

Prior to initiating field activities, BB&J prepared a Health and Safety Plan (HSP) for use by BB&J's on-site representative to address known and suspected site-specific constituents of concern (COCs), potential site and work-related hazards, and additional health and safety issues. In addition, and on behalf of BB&J, HH Holmes of Wheeling, Illinois (HH Holmes) and Terra Trace Environmental Services (Terra Trace) contacted the approved Illinois utility locating companies to clear the underground utilities on May 7, 2007 (over 72 hours prior to field work).

3.2 Soil Gas Survey

On May 11, 2007, BB&J oversaw the installation of three soil gas probes: CDSG-1, CDSG-2, and CDSG-3. Using direct-push technology (i.e., Geoprobe), Terra Trace created three holes in the subsurface located in each of the approximate centers of the proposed commercial buildings on the north portion of the Subject Property. Refer to Figure 2 for a site plan showing soil gas locations.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Active Soil Gas Investigation Advisory* Section 2.2.5 A 1 and 2, created by the California Environmental Protection Agency (EPA), dated January 28, 2003[1]. By use of direct-push technology (i.e., Geoprobe), a soil probe was advanced to a depth of 6 feet below ground surface (bgs) to create a hole for the soil vapor probe. Soil probes CDSG-1, CDSG-2, and CDSG-3 were installed to the bottom of the hole at an approximate depth of six feet bgs. Approximately one foot of sand was poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

The soil gas samples were collected using 400-milliliter (mL) Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60-mL plastic syringe with a three-way valve. Approximately 4 mLs per foot, or a total of 40 mLs (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch swagelok fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped

[1] This document was prepared by the California EPA Department of Toxic Substance Control (DTSC) and the Los Angeles Regional Water Quality Control Board (LARWQCB) to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the California EPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by United States Environmental Protection Agency (USEPA) Method TO-15 and methane by USEPA Method 8015.

3.3 Subsurface Soil Investigation

On May 14, 2007 through May 18, 2007, BB&J provided oversight for the advancement of 11 soil borings utilizing a hollow stem auger (SB-1 through SB-3[2], and SB-5 through SB-12), and the installation of four permanent monitoring wells (MW-5, MW-9, MW-10, and MW-12) by HH Holmes. The 11 soil borings and four permanent monitoring wells were advanced near the corners of the proposed three commercial buildings on the north portion of the Subject Property. The soil borings were located as follows:

- Three soil borings were advanced in the location of the most western proposed commercial building (SB-1 through SB-3);
- One soil boring, SB-5, was advanced in the location of the proposed entrance drive between the proposed western and central buildings;
- Four soil borings, SB-6 through SB-9, were advanced in the location of the center proposed commercial building; and,
- Three soil probes, SB-10 through SB-12, were advanced in the location of the most eastern proposed commercial building. Refer to Figure 2 for a site plan showing soil boring locations.

Soil samples were collected concurrently with the geotechnical investigation at the Subject Property and in accordance with BB&J's field procedures, as summarized in Attachment A. BB&J collected the soil samples, performed visual classification of soil type(s), field screened the samples using a photoionization detector (PID), and submitted select soil samples for laboratory chemical analyses.

As described in BB&J Proposal PN7-0109, two to three soil samples from six of the 11 soil borings were submitted from the following depths to First Environmental Laboratories, Inc. of Naperville, Illinois (First Environmental) for chemical analyses:

- Near surface (i.e. 0 to 2 feet bgs);
- Bottom of each boring; and,

[2] No boring designated "SB-4" was advanced during this investigation due to site access constraints.

- One or more additional depths based on field observations and field screening.

The exceptions to this protocol are as follows:

- BB&J submitted a sample collected from the vicinity of SB-5 based on observed black, pooling liquid at the surface.
- Due to a lack of recovery, BB&J was not able to submit a "near surface" sample for SB-10; BB&J, however, did submit a sample from 6.5 to 7 feet bgs, the nearest surface sample possible for the boring.

As such, the following soil samples were selected for laboratory analyses:

SB-3

- 1-2.5 feet bgs
- 3.5-5 feet bgs
- 13.5-15 feet bgs

SB-5

- 3.5-5 feet bgs
- 6-7.5 feet bgs

Vicinity SB-5

- 0-1 feet bgs

SB-7

- 1-2.5 feet bgs
- 6.5-7 feet bgs
- 58.5-60 feet bgs

SB-9

- 1-2.5 feet bgs
- 6-7.5 feet bgs
- 18.5-20 feet bgs

SB-10

- 6.5-7 feet bgs
- 8.5-10 feet bgs
- 18.5-20 feet bgs

SB-12

- 1-2.5 feet bgs
- 8.5-10 feet bgs
- 13.5-15 feet bgs

Each of the soil samples collected from the soil borings were analyzed for the following:

- VOCs by USEPA Method 8260B;
- Semivolatile organic compounds (SVOC) by USEPA Method 8270C;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082;
- Resource Conservation and Recovery Act (RCRA) metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;

- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

In addition, an equipment rinsate sample also was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochlorine pesticides and pH. The laboratory supplied the trip blank sample for quality assurance/quality control (QA/QC) purposes. The trip blank sample was analyzed for VOCs.

3.4 Ground-Water Investigation

On May 17, 2007, BB&J provided oversight for the installation of four permanent monitoring wells (MW-5, MW-9, MW-10, and MW-12) in their respective soil boring locations by HH Holmes. Refer to Figure 2 for a site plan showing permanent monitoring well locations. On May 18, 2007, BB&J purged each of the four permanent monitoring wells, allowed the well to recharge, and collected ground-water samples from each of the wells. The samples collected were analyzed for the following:

- VOCs by USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

Details of the aforementioned subsurface assessment activities are presented within the Field Procedures (Appendix A).

4.0 FINDINGS AND ANALYTICAL RESULTS

The following sections present the subsurface assessment findings and a summary of the laboratory analytical results.

4.1 Subsurface Geology and Hydrogeology

Based on visual classification of the subsurface soil encountered during the assessment, the primary subsurface soil type consisted of stiff and medium stiff, gray and brown clay fill. Traces of sand and

gravel were encountered throughout the borings, at depths of 0 to 60 feet bgs. Additionally, occasional ash and asphalt debris was encountered. Auger refusal, believed to be the top of bedrock, was encountered at depths of 5 to 6 feet bgs on the western portion of the Subject Property, at a maximum depth of 60 feet bgs in the central portion of the Subject Property, and generally around 20 or 40 feet bgs on the eastern portion of the Subject Property. Copies of the field soil probe logs are presented in Appendix B. Ground-water was encountered approximately 5 feet bgs in MW-5, 18 feet bgs in MW-9, 13 feet bgs in MW-10, and 19 feet bgs in MW-12.

Based upon measured ground-water elevations, as shown in the Potentiometric Map as Figure 3, the ground-water at the Subject Property appears to generally flow to the east-southeast. Ground-water elevations were calculated from a land survey of permanent monitoring wells MW-5, MW-9, MW-10, and MW-12, performed on May 18, 2007, by BB&J (see Figure 4, for the Monitoring Well Diagrams, Table 4 for the Monitoring Well Construction and Development Data and Table 5 for the Monitoring Well and Ground-Water Elevation Data).

4.2 Field Screening Results

Based on the field screening results of soil samples, organic vapor readings ranged from 0.0 parts per million (ppm)[3] to 57.8 ppm. Field screening results are presented on the field probe logs contained in Appendix B.

4.3 Laboratory Analytical Results

It is BB&J's understanding that the Subject Property is being considered for commercial purposes. Therefore, BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[4] to compare the results of the soil gas survey to potential vapor intrusion pathways into the proposed commercial buildings. In using the J&E calculator, BB&J utilized commercial exposure factors as the Subject Property is being developed for commercial use[5].

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[3] Organic vapor readings are based on a calibration of the mini-RAE PID to 100 ppm isobutylene. All background readings were 0.0 ppm.
[4] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[5] The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response *Risk Assessment Guidance For Superfund Volume I: Human Health Evaluation Manual* (RAGS Volume I), dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

In addition, as the Subject Property is intended for commercial use, the soil and ground-water laboratory analytical data (Appendix C) was compared to the established criteria in the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action (TACO) industrial/commercial and construction worker Remediation Objectives (ROs) to evaluate the potential risk posed by detected constituents of concern (COCs).

A summary of the soil gas analytical results for samples collected from proposed commercial building locations were compared to J&E calculated Estimated Risk-based Soil Gas Standards for a commercial scenario is in Table 1. A summary of the soil analytical results is found in Table 2. A summary of the ground-water analytical results is found in Table 3.

4.3.1 Soil Gas

Soil gas samples (CDSG-1, CDSG-2, and CDSG-3) were analyzed for VOCs and methane. VOCs were detected in soil gas samples in the proposed locations of the commercial buildings by USEPA TO-15 analysis, including:

- Acetone
- Benzene
- 2-Butanone
- Carbon disulfide
- Chloromethane
- Cyclohexane
- 1,2-Dichloroethane
- cis-1,2-Dichloroethene
- Ethylbenzene
- n-Heptane
- n-Hexane
- 2-Hexanone
- 4-Methyl-2-pentanone
- Propene
- Tetrachloroethene (PCE)
- Toluene
- Trichloroethene (TCE)
- 1,2,4-Trimethylbenzene
- Vinyl chloride
- m,p-Xylene
- o-Xylene

In addition, methane was detected in each of the three soil gas samples using a modified version of USEPA Method 8015B. Specific locations and concentrations of each of these are presented in Figure 2, and Table 1. Further discussion of these results is provided in Section 5.0.

4.3.2 Soil Investigation

BB&J compared the laboratory analytical results for VOCs, SVOCs, PCBs, RCRA metals, herbicides, and organochlorine pesticides to the IEPA TACO ROs for industrial/commercial and construction worker exposure pathways [Table B of 35 IAC Section 742 Appendix B] Class I and Class II [Table D of 35 IAC

Section 742 Appendix B] ground-water migration. A summary of the soil laboratory analytical results is presented in Table 2.

PCBs and Herbicides

No PCBs or herbicides were detected at concentrations above applicable RLs in the soil samples collected.

VOCs

VOCs were detected above laboratory RLs in soil samples collected at various soil boring locations and depths at the Subject Property. However, of the VOCs identified above laboratory RLs, only benzene collected from SB-7 (6-7.5 feet bgs) [(1.12 milligram per kilogram (mg/kg)] and vinyl chloride collected from SB-3 (3.5-5 feet bgs) (0.0269 mg/kg) exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water. In addition, the benzene collected from SB-7 (6-7.5 feet bgs) also exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class II ground-water. Additionally, only total xylene concentrations reported for the samples collected from SB-7 (6-7.5 feet bgs) and SB-7 (58.5-60 feet bgs) exceeded the TACO RO for the construction worker inhalation exposure route.

SVOCs

SVOCs were detected above laboratory RLs in 12 of the 18 soil samples collected at various soil boring locations and depths throughout the Subject Property. Of these 12 samples, five exhibited one or more SVOCs at concentration exceeding one or more applicable TACO ROs. Specifically, the samples reported to contain PAHs at concentration exceeding one or more applicable TACO ROs were:

- SB-3 (3.5-5);
- Vicinity SB-5 (0-1);
- SB-5 (3.5-5);
- SB-7 (7-7.5); and
- SB-7 (58.5-60).

Of the SVOCs identified above laboratory RLs, the following SVOCs and concentrations exceeded one or more applicable TACO ROs:

- Benzo(a)anthracene at a concentration of 34.6 mg/kg exceeded the exceeded the TACO RO for the industrial/commercial ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water;

- Benzo(a)pyrene at concentrations of 2.05 mg/kg, 2.39 mg/kg, 3.72 mg/kg, and 35 mg/kg exceeded the TACO RO for the industrial/commercial ingestion exposure route. Additionally, the 35 mg/kg concentration exceeded the TACO RO for the construction worker ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water;

- Benzo(b)fluoranthene at a concentration of 29.8 mg/kg exceeded the TACO RO for the industrial/commercial ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water;

- Carbazole at a concentration of 3.25 mg/kg and 20.8 mg/kg exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water;

- Dibenzo(a,h)anthracene at a concentration of 7.73 mg/kg exceeded the TACO RO for the industrial/commercial ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water;

- Ideno(1,2,3-cd)pyrene at a concentration of 18.9 mg/kg exceeded the TACO RO for the industrial/commercial ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water; and,

- Naphthalene at a concentration of 4.71 mg/kg, 106 mg/kg and 403 mg/kg exceeded the TACO RO for the construction worker inhalation exposure route. Additionally, the 106 mg/kg and 403 mg/kg concentrations exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water, and the 403 mg/kg concentration exceeded the TACO RO for the industrial/commercial inhalation exposure route.

RCRA Metals

Various RCRA metals were detected above laboratory RLs in soil samples collected at soil boring locations and depths throughout the Subject Property. However, of the RCRA metals identified above laboratory RLs, only arsenic exceeded the applicable TACO RO for the industrial/commercial ingestion exposure route in the sample collected from SB-3 from a depth of 13.5-15 feet bgs (31 mg/kg). In addition, this soil sample exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water. Concentrations of mercury in soil samples collected from SB-3 from a depth of 3.5-5 feet bgs, SB-7 from a depth of 6-7.5 feet bgs (0.28 mg/kg), and SB-7 from a depth of 58.5-60 feet bgs (2.66 mg/kg) exceeded the applicable TACO RO for the construction worker inhalation exposure route, and the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water. In addition, mercury in the soil sample collected from SB-5 (6-7.5 feet bgs) Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water, while a soil sample

collected from SB-12 from a depth of 13.5-15 feet bgs exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water.

Organochlorine Pesticides

Several organochlorine pesticides were detected in several soil samples collected from SB-3 (1-2.5 feet bgs and SB-3 (3.5-5 feet bgs) above laboratory RLs, including 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT. However, of the organochlorine pesticides identified above laboratory RLs, none were reported to be present above any applicable TACO ROs.

4.3.3 Ground Water

Ground-water samples were collected from permanent monitoring wells MW-5, MW-9, MW-10, and MW-12, and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, and organochlorine pesticides. BB&J compared the laboratory analytical results to the IEPA TACO ROs for the Class I and Class II ground-water RO [Table E of 35 IAC 742, Appendix B]. A summary of the ground-water laboratory analytical results is presented in Table 3.

VOCs, PCBs, Herbicides, Organochlorine Pesticides[6]

Of the four ground-water samples analyzed for VOCs, PCBs, herbicides and organochlorine pesticides, none were detected above the laboratory RLs.

SVOCs

Of the four ground-water samples analyzed for SVOCs, only naphthalene from the ground-water sample collected at MW-12 was detected above laboratory RLs at a concentration of 0.011 mg/L. However, the concentration of naphthalene detected did not exceed the ground-water TACO RO for Class I ground-water ingestion.

RCRA Metals

Of the four ground-water samples analyzed for RCRA metals, one or more of the following metals were detected in ground-water samples collected at MW-5, MW-9, MW-10, and MW-12 at concentrations

[6] Due to a lack of water from MW-5, BB&J was unable to collect sufficient amounts of water for the laboratory to analyze SVOCs, PCBs, herbicides, or pesticides in the ground water at MW-5.

above the applicable laboratory RLs: arsenic, barium, cadmium, chromium and lead. Of these, cadmium was detected in the ground-water sample from MW-5 at a concentration that exceeded the ground-water TACO RO for Class I ground-water and lead was detected in ground-water samples from MW-10 and MW-12 that exceeded the ground-water TACO RO for Class I and Class II ground water.

4.3.4 QA/QC

No VOCs, SVOCs, RCRA metals, herbicides, or organochlorine pesticides were reported in the equipment rinsate sample, and no VOCs were reported in the trip blank.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following sections present BB&J's conclusion and recommendations based on Phase II ESA findings at the Subject Property.

5.1 Soil Gas Survey

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in buried wastes and/or impacted ground water can emit vapors that may migrate through subsurface soil and into air spaces of overlying buildings.

5.1.1 Johnson and Ettinger Calculations

BB&J utilized USEPA's on-line J&E calculator[7] to evaluate the vapor intrusion pathway into the proposed commercial buildings on the north portion of the Subject Property. This J&E calculator replicates the implementation that the USEPA Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (OSWER Vapor Intrusion Guidance) used in developing its Vapor Intrusion Guidance but includes a number of enhancements that are facilitated by web implementation. The J&E calculator has become increasingly popular with regulators and consultants over the last 10 years and several manuscripts have been published on its use. It should be noted that the State of Illinois does not provide any guidance or soil gas standards with regard to vapor intrusion.

Briefly, the calculator is a one-dimensional analytical solution, which incorporates both advection and diffusion transport mechanisms to produce a unitless "attenuation factor." This attenuation factor is a

measure of how soil and building properties limit the intrusion of organic vapors into overlying buildings and is defined as the concentration of the compound in indoor air divided by the concentration of the compound in soil gas or ground water.

Although the J&E calculator is inherently conservative, BB&J also made the following conservative assumptions in running the calculator:

- The highest soil vapor concentration of a given constituent identified site-wide was assumed to be the concentration present site-wide (even if lower concentrations were identified elsewhere) for the proposed commercial buildings vapor intrusion scenario on the north portion of the Subject Property (i.e., as presented in Table 2);
- OSWER Vapor Intrusion Guidance[8] allows a site risk manager to select media-specific target concentrations for screening at three cancer risk levels: 10^{-4}, 10^{-5}, and 10^{-6}; however, BB&J compared the modeled results to the most conservative of these (10^{-6});
- A less protective, best estimate and more protective target concentration were computed for the maximum soil gas concentration of a given constituent detected at the Subject Property. These computed "backward" target concentrations served as comparison to the detected soil gas concentrations at the Subject Property. The best estimate concentrations are based on the best guesses of depth to the contamination source and residual moisture content for the chosen soil type. The less protective and more protective range of values is computed based on user-specified uncertainty in both depth to the contamination source and unsaturated zone moisture content; and,
- The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed building on the south portion of the Subject Property, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response RAGS Volume I, dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample (see Section 4.2).

5.1.2 Proposed Commercial Buildings

As indicated in Table 2, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected in the soil gas samples. Of the VOCs detected in gas samples CDSG-1, CDSG-2, and CDSG-3, only PCE

[7] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[8] http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf

and TCE detected in CDSG-2 was estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Vapor Standards[9].

Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, i.e., Superfund) risk assessment, modeled cancer risks under the most protective scenario slightly exceeded the 10^{-6} bench mark used for risk assessment purposes. Plainly stated, the modeled results indicate a slightly greater than approximately one in a million chance per employee developing cancer directly attributable to vapor intrusion into the buildings due to on-site sources. This risk is driven primarily by the presence of TCE and PCE, which are known or suspected carcinogens.

In addition to the VOCs detected at the proposed building on the south portion of the Subject Property, as indicated in Table 2 methane was detected in each soil gas sample from the three soil probe locations. However, none of the three soil gas samples contained concentrations within the explosive range for methane.

5.1.3 Soil Gas Conclusions

As indicated above, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected from the north portion of the Subject Property. Based on modeled results using default exposure factors for commercial scenarios, a cancer risk exceeded the benchmark 10^{-6} (i.e., one in a million) cancer risk in the commercial scenario. This elevated risk is driven primarily by the presence of PCE and TCE.

In addition to the chronic hazard potentially present at the Subject Property, concentrations of methane were reported to be present in all three soil gas samples; however, none of the samples collected contained concentrations of methane within the explosive range for methane.

Such concentrations suggest that these constituents have the potential to accumulate within the proposed building on the south portion of the Subject Property at concentrations that would pose a human health risk. However, it should be noted that (1) the Johnson-Ettinger model is inherently conservative and (2) new soil is continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings.

[9] These J&E calculations used commercial/industrial default exposure factors due to the intended commercial use of Subject

Possible remedies to limit the exposure of this constituent to the proposed building on the south portion of the Subject Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting subsurface would require maintenance and upkeep for the lifetime of the buildings. In addition, the venting system may require air permits from IEPA to discharge VOCs into the ambient air.

Although methane was not detected within its explosive range in the three soil gas samples, the presence of methane should be noted and explored further. To ensure that methane would not accumulate beneath or within the proposed building on the south portion of the Subject Property, proper venting of this structure would potentially be required to reduce the potential for explosions to occur. The presence of methane in the gas samples may indicate that material inconsistent with IEPA's definition of clean construction and demolition debris may be present beneath the surface of the Subject Property. As the material decomposes, shifting of the subsurface may occur, causing structural damage to overlying structures.

The specific sources of the VOCs and methane could not be determined by the scope of this investigation. However, BB&J understands that a gasoline station was formerly located on the northeast portion of the Subject Property near the intersection of Ogden Avenue and Lawndale Avenue. A leaking underground storage tank (LUST) incident was reported for the gasoline station and a No Further Remediation (NFR) letter was issued for the LUST incident. Despite the issuance of the NFR, the gasoline station may still be the source of the gasoline-related compounds, partly or wholly. Sources of the chlorinated solvents and non-chlorinated solvents have not been identified.

The modeling conducted by BB&J should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model include, but are not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;

Property.

- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

5.2 Subsurface Soil Investigation

During the Phase II ESA, BB&J collected 18 soil samples from 11 soil probe locations throughout the north portion of the Subject Property. The samples were submitted to First Environmental and analyzed for VOCs, SVOCs, RCRA metals, herbicides, organochlorine pesticides and pH.

No PCBs or herbicides were detected at concentrations above applicable RLs in the soil samples collected. However, multiple SVOCs and metals were detected above laboratory RLs in soil samples collected at various soil boring locations and depths throughout the Subject Property and at concentrations exceeding one or more applicable TACO ROs, including the ingestion exposure route and migration to ground-water ingestion exposure routes.

No discernable pattern appeared to exist with respect to the locations or depths where the exceedances were encountered; however, given that backfill material present at the Subject Property has been contributed from a variety of off-site sources, such heterogeneity would be expected. Given the heterogeneity of the impacts, delineating source areas followed by treatment or source removal would not likely be a cost-efficient proposition.

Consequently, BB&J recommends eliminating the ingestion exposure pathway by installing an engineered barrier of some kind. Given the future intended use as a commercial development, (1) covering the entirety of the Subject Property with either a building slab or asphalt parking lot, (2) incorporating an institutional control (i.e., deed restriction) at each of the commercial parcels to restrict future use to commercial, (3) incorporating the engineered barriers into the institutional control, and (4) providing for operation and maintenance of the barriers, all of which would be in perpetuity, these actions would result in eliminating this pathway. With respect to the migration to ground-water concerns, it should be noted that the Village of Lyons currently has an ordinance restricting the use of ground water in place, thereby effectively eliminating this pathway. Specifically, Ordinance 5-18-99-3 was accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons and states that “the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of

Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons." A copy of this use restriction can be found in Appendix D.

5.2.1 Ground Water

During the Phase II ESA, BB&J collected ground-water samples from four permanent monitoring wells. The ground-water samples were submitted to First Environmental and analyzed for VOCs, SVOCs, RCRA metals, herbicides, organochlorine pesticides and pH.

Of the four ground-water samples analyzed for VOCs, PCBs, herbicides and organochlorine pesticides, none were detected above the laboratory RLs.

Of the four ground-water samples analyzed for SVOCs, only naphthalene from the ground-water sample collected at MW-12 was detected above laboratory RLs at a concentration of 0.011 mg/L. However, the concentration of naphthalene detected did not exceed the ground-water TACO RO for Class I ground-water ingestion. The detected concentrations of naphthalene do not suggest the presence of free product.

Of the four ground-water samples analyzed for RCRA metals, one or more of the following metals were detected in ground-water samples collected at MW-5, MW-9, MW-10, and MW-12 at concentrations above the applicable laboratory RLs: arsenic, barium, cadmium, chromium and lead. Of these, cadmium was detected in the ground-water sample from MW-5 at a concentration that exceeded the ground-water TACO RO for Class I ground-water and lead was detected in ground-water samples from MW-10 and MW-12 that exceeded the ground-water TACO RO for Class I and Class II ground-water.

Although concentrations of cadmium and lead exceeded TACO ROs, the Village of Lyons already has in place an ordinance. Ordinance 5-18-99-3 was accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons and states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons." A copy of this use restriction can be found in Appendix D. Due to the fact that a restriction on the ground-water for the Subject Property currently exists, BB&J does not recommend further investigation with respect to ground-water.

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results

				Maximum Concentration Detected at Subject Property	BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards[1]			Explosive Range	
Soil - Gas ID	CDSG - 1	CDSG - 2	CDSG - 3		Less Protective Target Concentrations	Best Estimate Target Concentrations	More Protective Target Concentrations	Lower Explosive Limit (LEL) [2]	Upper Explosive Limit (UEL) [2]
Soil Sample Depth[3]	6.0	6.0	6.0						
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(%)	(%)
USEPA Method T0-15 (VOCs)									
Acetone	120	620	250	620	819,400	291,800	163,100	NA	NA
Benzene	15	330	58	330	15,770	3,831	1,921	NA	NA
2-Butanone (MEK)	27	160	68	160	3,444,000	1,121,000	556,400	NA	NA
Carbon disulfide	6.8	260	ND	260	2,642,000	664,200	349,000	NA	NA
Chloromethane (Methyl Chloride)	ND	34	ND	34	8,865.0	2,338.0	1,297.0	NA	NA
Cyclohexane	ND	89	270	270	NMD	NMD	NMD	NA	NA
1,1-Dichloroethane	ND	ND	6.1	6.1	2,576,000	605,300	289,800	NA	NA
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	ND	6.4	30	30	181,300	42,630	20,370	NA	NA
Ethylbenzene	6.6	13	9.5	13	13,000	3,057	1,468	NA	NA
n-Heptane (Heptane)	51	86	74	86	NMD	NMD	NMD	NA	NA
n-Hexane (Hexane)	25	180	240	240	4,212,000	1,272,000	803,500	NA	NA
2-Hexanone	ND	ND	ND	ND	NMD	NMD	NMD	NA	NA
4-Methyl-2-pentanone (Methylisobutylketone)	ND	5.8	16	16	354,500	95,550	46,120	NA	NA
Propene	17	1,800	1,500	1,800	NMD	NMD	NMD	NA	NA
Tetrachloroethene (Tetrachloroethylene)	16	**1,500**	12	1,500	4,961	1,156	549	NA	NA
Toluene	18	78	49	78	1,777,000	430,500	215,200	NA	NA
Trichloroethene (Trichloroethylene)	ND	**29**	11	29	123.9	29.4	14.32	NA	NA
1,2,4-Trimethylbenzene	ND	12	ND	12	37,090	8,422	3,826	NA	NA
Vinyl chloride	ND	ND	110	110	1,180	298	157.4	NA	NA
m,p-Xylene	15	28	19	28	NMD	NMD	NMD	NA	NA
o-Xylene	6.8	11	12	12	NA	7,533,000	3,766,000	NA	NA
USEPA Method 8015B	(%)	(%)	(%)	(%)					
Methane	0.0011	0.11	1.8	1.8	NMD	NMD	NMD	5.0	15.0

Notes:

[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model and the known maximum concentration detected at the proposed Community Center (http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm). As the proposed commercial development will be used for commercial purposes, the standard default exposure parameters in the Johnson & Ettinger Vapor Intrusion Model were changed to reflect this use. The list of parameters that were changed can be found in the USEPA Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (RAGS Volume I), dated March 25, 1991, "Summary of Standard Default Exposure Factors", Commercial/Industrial Use, Inhalation of Contaminants Exposure Pathway.

[2] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.

[3] Depths indicated in feet below ground surface (bgs).

Bold indicates an exceedance of a BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards Target Concentration.

Acronyms:

NA: Not applicable
ND: Not detected
NMD: No model data for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: MLH / 5.23.2007
Checked By: AWB / 6.11.2007

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:27:52 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08[g/mole] Henrys Constant: 0.0008474723[unitless]
Diffusivity in Air: 0.1240[cm^2/sec] Diffusivity in Water: 1.140e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007951[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.005227[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001751
Ground Water Attenuation Factor (α_{GW}): 0.001311
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 511[$\mu g/m^3$] or 215.3[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8.194e5[$\mu g/m^3$] or 3.452e5[ppbv]; Ground Water: 9.795e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2.918e5[$\mu g/m^3$] or 1.229e5[ppbv]; Ground Water: 4.598e5[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.631e5[$\mu g/m^3$] or 6.870e4[ppbv]; Ground Water: 3.363e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:29:25 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11[g/mole] Henrys Constant: 0.1152703[unitless]
Diffusivity in Air: 8.800e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000078[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 25 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00554[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000377[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001368
Ground Water Attenuation Factor (α_{GW}): 0.0001257
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 5.241[$\mu g/m^3$] or 1.642[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.577e4[$\mu g/m^3$] or 4939.[ppbv]; Ground Water: 447.9[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 3831.[$\mu g/m^3$] or 1200.[ppbv]; Ground Water: 361.9[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1921.[$\mu g/m^3$] or 601.8[ppbv]; Ground Water: 348.4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:30:38 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11[g/mole] Henrys Constant: 0.001130542[unitless]
Diffusivity in Air: 8.080e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00518[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.003388[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001303
Ground Water Attenuation Factor (α_{GW}): 0.000938
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1460[$\mu g/m^3$] or 495.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.444e6[$\mu g/m^3$] or 1.169e6[ppbv]; Ground Water: 3.092e6[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.121e6[$\mu g/m^3$] or 3.803e5[ppbv]; Ground Water: 1.377e6[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.564e5[$\mu g/m^3$] or 1.888e5[ppbv]; Ground Water: 9.705e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:07 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13[g/mole] Henrys Constant: 0.7157535[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006547[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003847[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001539
Ground Water Attenuation Factor (α_{GW}): 0.0001282
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1022[$\mu g/m^3$] or 328.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.642e6[$\mu g/m^3$] or 8.490e5[ppbv]; Ground Water: 1.344e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.642e5[$\mu g/m^3$] or 2.134e5[ppbv]; Ground Water: 1.114e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.490e5[$\mu g/m^3$] or 1.122e5[ppbv]; Ground Water: 1.078e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 13:02:28 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49[g/mole] Henrys Constant: 0.2477062[unitless]
Diffusivity in Air: 0.1260[cm^2/sec] Diffusivity in Water: 6.500e-6[cm^2/sec]
Unit Risk Factor: 0.000001[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007931[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0004727[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001749
Ground Water Attenuation Factor (α_{GW}): 0.0001565
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 4.088[$\mu g/m^3$] or 1.981[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8865.[$\mu g/m^3$] or 4296.[ppbv]; Ground Water: 127.3[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2338.[$\mu g/m^3$] or 1133.[ppbv]; Ground Water: 105.4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1297.[$\mu g/m^3$] or 628.7[ppbv]; Ground Water: 102.0[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:55 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethane CAS Number: 75343
Molecular Weight: 98.96[g/mole] Henrys Constant: 0.1239506[unitless]
Diffusivity in Air: 7.420e-2[cm^2/sec] Diffusivity in Water: 1.050e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.5[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003269[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001206
Ground Water Attenuation Factor (α_{GW}): 0.0001093
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 730[$\mu g/m^3$] or 180.5[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.576e6[$\mu g/m^3$] or 6.368e5[ppbv]; Ground Water: 6.707e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.053e5[$\mu g/m^3$] or 1.496e5[ppbv]; Ground Water: 5.386e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.898e5[$\mu g/m^3$] or 7.164e4[ppbv]; Ground Water: 5.179e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:03 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: cis-1,2-Dichloroethylene CAS Number: 156592
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.08772779[unitless]
Diffusivity in Air: 7.360e-2[cm^2/sec] Diffusivity in Water: 1.130e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.035[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004634[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003552[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001199
Ground Water Attenuation Factor (α_{GW}): 0.0001186
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 51.1[$\mu g/m^3$] or 12.9[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.813e5[$\mu g/m^3$] or 4.575e4[ppbv]; Ground Water: 6226.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.263e4[$\mu g/m^3$] or 1.076e4[ppbv]; Ground Water: 4912.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.037e4[$\mu g/m^3$] or 5140.[ppbv]; Ground Water: 4706.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:40 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.1364569[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000011[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004722[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003106[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001216
Ground Water Attenuation Factor (α_{GW}): 0.000104
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 3.716[$\mu g/m^3$] or 0.8564[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.300e4[$\mu g/m^3$] or 2995.[ppbv]; Ground Water: 322.4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 3057.[$\mu g/m^3$] or 704.4[ppbv]; Ground Water: 261.9[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1468.[$\mu g/m^3$] or 338.2[ppbv]; Ground Water: 252.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18[g/mole] Henrys Constant: 35.82923[unitless]
Diffusivity in Air: 0.2000[cm^2/sec] Diffusivity in Water: 7.770e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 25 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.01259[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000721[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.002296
Ground Water Attenuation Factor (α_{GW}): 0.0002348
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 2920[$\mu g/m^3$] or 829[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4.212e6[$\mu g/m^3$] or 1.196e6[ppbv]; Ground Water: 415.2[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.272e6[$\mu g/m^3$] or 3.611e5[ppbv]; Ground Water: 347.0[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 8.035e5[$\mu g/m^3$] or 2.281e5[ppbv]; Ground Water: 336.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:59 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16[g/mole] Henrys Constant: 0.002453269[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004755[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.001889[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001222
Ground Water Attenuation Factor (α_{GW}): 0.0005711
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 116.8[$\mu g/m^3$] or 28.53[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.545e5[$\mu g/m^3$] or 8.658e4[ppbv]; Ground Water: 1.712e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 9.555e4[$\mu g/m^3$] or 2.334e4[ppbv]; Ground Water: 8.337e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 4.612e4[$\mu g/m^3$] or 1.127e4[ppbv]; Ground Water: 6.698e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:39:34 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83[g/mole] Henrys Constant: 0.3362604[unitless]
Diffusivity in Air: 7.200e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0.000003[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004532[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002767[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001179
Ground Water Attenuation Factor (α_{GW}): 0.00009288
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 1.363[$\mu g/m^3$] or 0.201[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4961.[$\mu g/m^3$] or 731.9[ppbv]; Ground Water: 53.04[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 1156.[$\mu g/m^3$] or 170.6[ppbv]; Ground Water: 43.63[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 549.0[$\mu g/m^3$] or 80.99[ppbv]; Ground Water: 42.16[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:10 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14[g/mole] Henrys Constant: 0.1257474[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 8.600e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005477[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003617[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001207
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 584[$\mu g/m^3$] or 155.1[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.777e6[$\mu g/m^3$] or 4.719e5[ppbv]; Ground Water: 4.738e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.305e5[$\mu g/m^3$] or 1.143e5[ppbv]; Ground Water: 3.848e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.152e5[$\mu g/m^3$] or 5.714e4[ppbv]; Ground Water: 3.708e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:41 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39[g/mole] Henrys Constant: 0.2057688[unitless]
Diffusivity in Air: 7.900e-2[cm^2/sec] Diffusivity in Water: 9.100e-6[cm^2/sec]
Unit Risk Factor: 0.00011[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004973[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003159[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001264
Ground Water Attenuation Factor (α_{GW}): 0.0001058
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.03716[$\mu g/m^3$] or 0.00692[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 123.9[$\mu g/m^3$] or 23.07[ppbv]; Ground Water: 2.089[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 29.40[$\mu g/m^3$] or 5.475[ppbv]; Ground Water: 1.708[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 14.32[$\mu g/m^3$] or 2.666[ppbv]; Ground Water: 1.648[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:41:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.09297282[unitless]
Diffusivity in Air: 6.060e-2[cm^2/sec] Diffusivity in Water: 7.920e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.003815[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002781[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001031
Ground Water Attenuation Factor (α_{GW}): 0.00009332
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 8.687[$\mu g/m^3$] or 1.768[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.709e4[$\mu g/m^3$] or 7550.[ppbv]; Ground Water: 1258.[µg/L]

Best Estimate Target Concentrations
Soil Gas: 8422.[$\mu g/m^3$] or 1714.[ppbv]; Ground Water: 1001.[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 3826.[$\mu g/m^3$] or 778.7[ppbv]; Ground Water: 961.1[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:00 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5[g/mole] Henrys Constant: 0.7413626[unitless]
Diffusivity in Air: 0.1060[cm^2/sec] Diffusivity in Water: 1.230e-5[cm^2/sec]
Unit Risk Factor: 0.0000088[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003938[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001559
Ground Water Attenuation Factor (α_{GW}): 0.0001311
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.4645[$\mu g/m^3$] or 0.1818[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1180.[$\mu g/m^3$] or 461.9[ppbv]; Ground Water: 5.768[μg/L]

Best Estimate Target Concentrations
Soil Gas: 298.0[$\mu g/m^3$] or 116.6[ppbv]; Ground Water: 4.779[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 157.4[$\mu g/m^3$] or 61.62[ppbv]; Ground Water: 4.625[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:35 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.08789842[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005478[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003933[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.000131
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 10220[$\mu g/m^3$] or 2355[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: Saturation[$\mu g/m^3$] or Saturation[ppbv]; Ground Water: Solubility[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 7.533e6[$\mu g/m^3$] or 1.736e6[ppbv]; Ground Water: Solubility[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 3.766e6[$\mu g/m^3$] or 8.678e5[ppbv]; Ground Water: Solubility[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

Table 2: Summary of Soil Laboratory Analytical Results

																			Exposure Route-Specific Values for Soil[7]				Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route						
																			Industrial-Commercial[2]		Construction Worker[2]				Ground-Water Migration pH range (7.75 to 8.24)		Ground-Water Migration pH range (8.25 to 8.74)		Ground-Water Migration pH range (8.75 to 9.0)		Background Concentration of Chemicals [6]
Soil Sample ID / Depth[5]	**SB-3 (1-2.5) (mg/kg)**	**SB-3 (3.5-5) (mg/kg)**	**SB-3 (13.5-15) (mg/kg)**	**SB-5 Vicinity (0-1) (mg/kg)**	**SB-5 (3.5-5) (mg/kg)**	**SB-5 (6-7.5) (mg/kg)**	**SB-7 (1-2.5) (mg/kg)**	**SB-7 (6-7.5) (mg/kg)**	**SB-7 (58.5-60) (mg/kg)**	**SB-9 (1-2.5) (mg/kg)**	**SB-9 (6-7.5) (mg/kg)**	**SB-9 (18.5-20) (mg/kg)**	**SB-10 (6-7.5) (mg/kg)**	**SB-10 (8.5-10) (mg/kg)**	**SB-10 (18.5-20) (mg/kg)**	**SB-12 (1-2.5) (mg/kg)**	**SB-12 (8.5-10) (mg/kg)**	**SB-12 (13.5-15) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**(mg/kg)**
pH	8.92	8.14	8.32	9.36	9.61	8.66	10.5	10.1	10.1	9.5	9.9	9.7	10.0	8.97	9.35	10.0	9.3	9.3	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
VOCs																															
Benzene	ND	ND	ND	ND	ND	ND	ND	**1.12**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1.6	2,300	2.2	0.03	0.17	NA	NA	NA	NA	NA	NA	NA
Cis-1,2-dichloroethene	0.0107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20,000	1,200	20,000	1,200	0.4	1.1	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	1.52	3.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	200,000	400	20,000	58	13	19	NA	NA	NA	NA	NA	NA	NA
Toluene	ND	ND	0.082	ND	ND	ND	ND	1.89	6.31	ND	ND	ND	ND	0.0088	ND	ND	ND	ND	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	ND	**0.0269**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.9	1.1	170	1.1	0.01	0.07	NA	NA	NA	NA	NA	NA	NA
Xylene, Total	ND	ND	0.056	ND	ND	ND	ND	**7.52**	**54.5**	ND	ND	ND	ND	0.006	ND	ND	ND	ND	410,000	320	41,000	5.6	150	150	NA	NA	NA	NA	NA	NA	NA
SVOCs																															
Acenaphthene	ND	0.381	ND	ND	ND	ND	ND	20.6	5.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.13
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	1.7	3.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.07
Anthracene	ND	1.53	ND	2.8	ND	ND	ND	30.4	5.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	NA	NA	0.4
Benzo(a)anthracene	ND	2.27	ND	4.09	ND	ND	0.464	**34.6**	1.25	0.372	ND	ND	ND	ND	ND	ND	ND	ND	8	NRO	170	NRO	2	8	NA	NA	NA	NA	NA	NA	1.1
Benzo(a)pyrene	0.302	**2.39**	ND	**3.72**	**2.05**	ND	0.413	**35**	0.774	0.403	ND	ND	ND	ND	ND	ND	ND	ND	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	NA	NA	1.3
Benzo(b)fluoranthene	0.339	2.03	ND	5.05	ND	ND	0.411	**29.8**	0.808	0.451	ND	ND	ND	ND	ND	ND	ND	ND	8	NRO	170	NRO	5	25	NA	NA	NA	NA	NA	NA	1.5
Benzo(k)fluouranthene	ND	2.57	ND	3.02	ND	ND	0.388	26.7	ND	0.366	ND	ND	ND	ND	ND	ND	ND	ND	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	NA	NA	0.99
Benzo(ghi)perylene	ND	1.17	ND	ND	ND	ND	ND	18.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	1.70
Carbazole	ND	0.476	ND	ND	ND	ND	ND	**20.8**	**3.25**	ND	ND	ND	ND	ND	ND	ND	ND	ND	290	NRO	6,200	NRO	1	2.8	NA	NA	NA	NA	NA	NA	NRO
Chrysene	0.340	2.58	ND	3.86	ND	ND	0.479	31	1.34	0.403	ND	ND	ND	ND	ND	ND	ND	ND	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	ND	0.5	ND	0.583	ND	ND	ND	**7.73**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	NRO	17	NRO	2	7.6	NA	NA	NA	NA	NA	NA	0.42
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	14.4	6.86	ND	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	7.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	41,000	NRO	41,000	NRO	9	9	NA	NA	NA	NA	NA	NA	NRO
Fluoranthene	0.658	3.42	ND	8.59	3.69	ND	1.11	88.3	4.56	0.902	ND	ND	ND	ND	ND	ND	ND	ND	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	NA	NA	4.1
Fluorene	ND	0.404	ND	1.98	ND	ND	ND	22.3	6.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	NA	NA	0.18
Ideno(1,2,3-cd)pyrene	ND	1.2	ND	ND	ND	ND	ND	**18.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	NRO	170	NRO	14	69	NA	NA	NA	NA	NA	NA	1.6
2-Methylnapthalene	ND	ND	ND	ND	ND	ND	ND	13.9	33.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	6.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	100,000	NRO	100,000	NRO	15	15	NA	NA	NA	NA	NA	NA	NRO
3 & 4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	20.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
Napthalene	ND	0.546	ND	ND	**4.71**	ND	ND	**106**	**403**	ND	0.467	0.756	ND	ND	ND	1.29	1.46	ND	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	NA	NA	0.2
Phenanthrene	0.43	2.87	ND	8.64	ND	ND	0.774	114	14.2	0.57	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	1.3
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	7.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	610,000	NRO	61,000	NRO	100	100	NA	NA	NA	NA	NA	NA	NRO
Pyrene	0.64	3.21	ND	6.84	3.49	ND	0.895	69	3.1	0.728	ND	ND	ND	ND	ND	ND	ND	ND	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	NA	NA	3.0
RCRA metals																															
Arsenic	7.1	5.9	**31**	5	1.8	7.7	3.2	6.6	6.6	2.4	0.9	4.4	2.6	4.9	1.5	3.9	6	3.9	13 [6]	1200	61	25,000	NA	NA	30	120	31	120	32	130	13
Barium	40	49.4	44.6	32.5	15.2	51.4	35.3	40	21.6	14.6	3.1	6.5	27.2	55.3	3.7	25.1	11	3.2	140,000	910,000	14,000	870,000	NA	NA	1,800	1,801	2,100	2,100	NRO	NRO	110
Cadmium	0.8	1	1	0.4	0.3	0.6	0.2	0.7	0.2	0.2	ND	0.2	0.3	0.4	ND	0.5	0.4	0.2	2,000	2,800	200	59,000	NA	NA	59	590	430	4,300	NRO	NRO	0.6
Chromium	12.9	21.6	12	7.9	7.1	9.5	8.2	20.2	5.6	5.2	2.3	3.3	4.3	16.9	3.3	2.3	5.8	1.9	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	NRO	NRO	16.2
Lead	138	86.5	22	19.7	22.2	21.7	3.3	32.7	5.9	10.1	ND	2.9	6.1	10.8	1.2	11.9	5.2	2.4	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	107	1,420	36
Mercury	ND	**0.12**	ND	ND	ND	**0.06**	ND	**0.28**	**2.66**	ND	ND	ND	ND	ND	ND	ND	ND	0.09	610	16	61	0.1	0.002	0.01	6.4	32	8	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides																															
4,4'-DDD	ND	0.0233	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24	NRO	520	NRO	16	80	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0178	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	NRO	370	NRO	54	270	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	ND	0.0298	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	1,500	100	2,100	32	160	NA	NA	NA	NA	NA	NA	NA
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 Title 35 IAC 742, Appendix B
2 Title 35 IAC 742, Appendix B, Table B
3 Title 35 IAC 742, Appendix B, Table C
4 Title 35 IAC 742, Appendix B, Table D
5 Soil boring depths are presented in feet bgs.
6 Title 35 IAC 742, Appendix A, Table H.
7 Title 35 IAC 742, Appendix A, Table G.
8 The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
9 pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH values between 4.5 and 9.0
* Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration, as indicated in Title 35 IAC 742, Appendix A, Table G.
Bold indicates an exceedance of an IEPA TACO RO

Acronyms:
bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NS - Not sampled
NRO - No remediation objectives established by the IEPA available for the route of exposure
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
VOC - Volatile organic compounds

Prepared by: KAB / 5.25.2007
Checked by: AWB / XXXX.2007

Table 3: Summary of Ground-Water Laboratory Analytical Results

					Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[1]	
Ground-Water ID	**MW-5 (mg/L)**	**MW-9 (mg/L)**	**MW-10 (mg/L)**	**MW-12 (mg/L)**	**Class I (mg/L)**	**Class II (mg/L)**
pH @ 25°C	7.50	7.56	7.48	7.52	NA	NA
SVOCs (PAHs)						
Naphthalene	INS	ND	ND	0.011	0.14	0.22
VOCs	ND	ND	ND	ND	NA	NA
PCBs	INS	ND	ND	ND	NA	NA
RCRA Metals						
Arsenic	0.01	ND	ND	ND	0.05	0.2
Barium	0.239	0.101	0.097	0.095	2.0	2.0
Cadmium	**0.006**	ND	ND	ND	0.005	0.05
Chromium	0.006	0.002	0.005	0.010	0.1	1.0
Lead	ND	ND	**0.009**	**0.024**	0.0075	0.1
Herbicides	INS	ND	ND	ND	NA	NA
Pesticides	INS	ND	ND	ND	NA	NA

Notes:
[1] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E

Acronyms:
INS - Insufficient water available for analysis
mg/L - milligrams per liter
NA - Not applicable
ND - Not detected above laboratory reporting limits
NS - Not sampled
PAH - Polynuclear aromatic hydrocarbons
RCRA - Resource Conservation and Recovery Act
RO - Remediation Objectives
SVOC - Semivolatile organic compounds
VOC - Volatile organic compounds

Prepared by: KAB / 6.4.2007
Checked by: AWB / 6.11.2007

Table 4: Monitoring Well Construction and Development Data

Monitoring Well Identification	Date Installed	Screened Interval (feet BGS)	Soil Horizon(s) Screened[1]	Materials of Construction	Date Developed	Water Column Length[2] (feet)	Well Casing Volume[3] (gallons)	Water Development Volume[4] (gallons)	Actual Development Volume[5] (gallons)
MW-5	5/17/2007	2.15 – 5.65	Clay Fill	SCH 40 PVC	5/18/2007	3.55	0.579	2.90	1.00
MW-9	5/17/2007	8.79–18.79	Clay Fill	SCH 40 PVC	5/18/2007	2.39	0.390	1.95	0.75
MW-10	5/17/2007	5.36 – 15.36	Clay Fill	SCH 40 PVC	5/18/2007	5.37	0.875	4.38	2.00
MW-12	5/17/2007	9.32 – 19.32	Clay Fill	SCH 40 PVC	5/18/2007	3.91	0.673	3.19	3.50

Notes:

[1]: Classification(s) of soil surrounding the screened portion of the monitoring well.
[2]: The monitoring wells were gauged by BB&J personnel on May 18, 2007 using an electronic interface probe.
[3]: Well casing volume, in gallons, is equal to the water column length in feet x 7.48 x π x R^2, where R = water column radius (1 inch) and π = 3.14159.
[4]: Well development volume is equal to the calculated well casing volume x 5.
[5]: Approximate volume of ground water removed from monitoring well during development. Actual Development Volume may be less than the Water Development Volume if the well ran dry during purging.

Acronyms:

BGS: Below Grade Surface
MW: Monitoring Well
SCH: Schedule
PVC: Polyvinyl chloride

Prepared By/Date: KAB / 6.11.2007
Checked By/Date: AWB / 6.11.2007

Table 5: Monitoring Well and Ground-Water Elevation Data[1]

Monitoring Well Identification[2]	Date Gauged	Material Of Well Construction	Well Depth (feet TOC)	Screened Interval (feet BGS)	Depth To Ground Water (feet TOC)	Depth To Ground Water (feet BGS)	Ground Surface Elevation (feet)	Top Of Casing Elevation (feet)	Ground-Water Elevation (feet)
MW-5	5/18/2007	SCH 40 PVC	8.74	2.15 – 5.65	5.19	2.1	104.76	104.64	99.45
MW-9	5/18/2007	SCH 40 PVC	20.41	8.81–18.81	18.02	16.4	106.44	108.06	90.04
MW-10	5/18/2007	SCH 40 PVC	18.35	5.36 – 15.36	12.98	9.99	101.53	104.52	91.54
MW-12	5/18/2007	SCH 40 PVC	22.65	9.32 – 19.32	18.74	15.41	105.58	108.91	90.17

Notes:

[1]: Reference point elevation is relative to assumed datum of telephone pole on the southwest side of the garage.
[2]: Monitoring wells are 2 inches in diameter.

Acronyms:

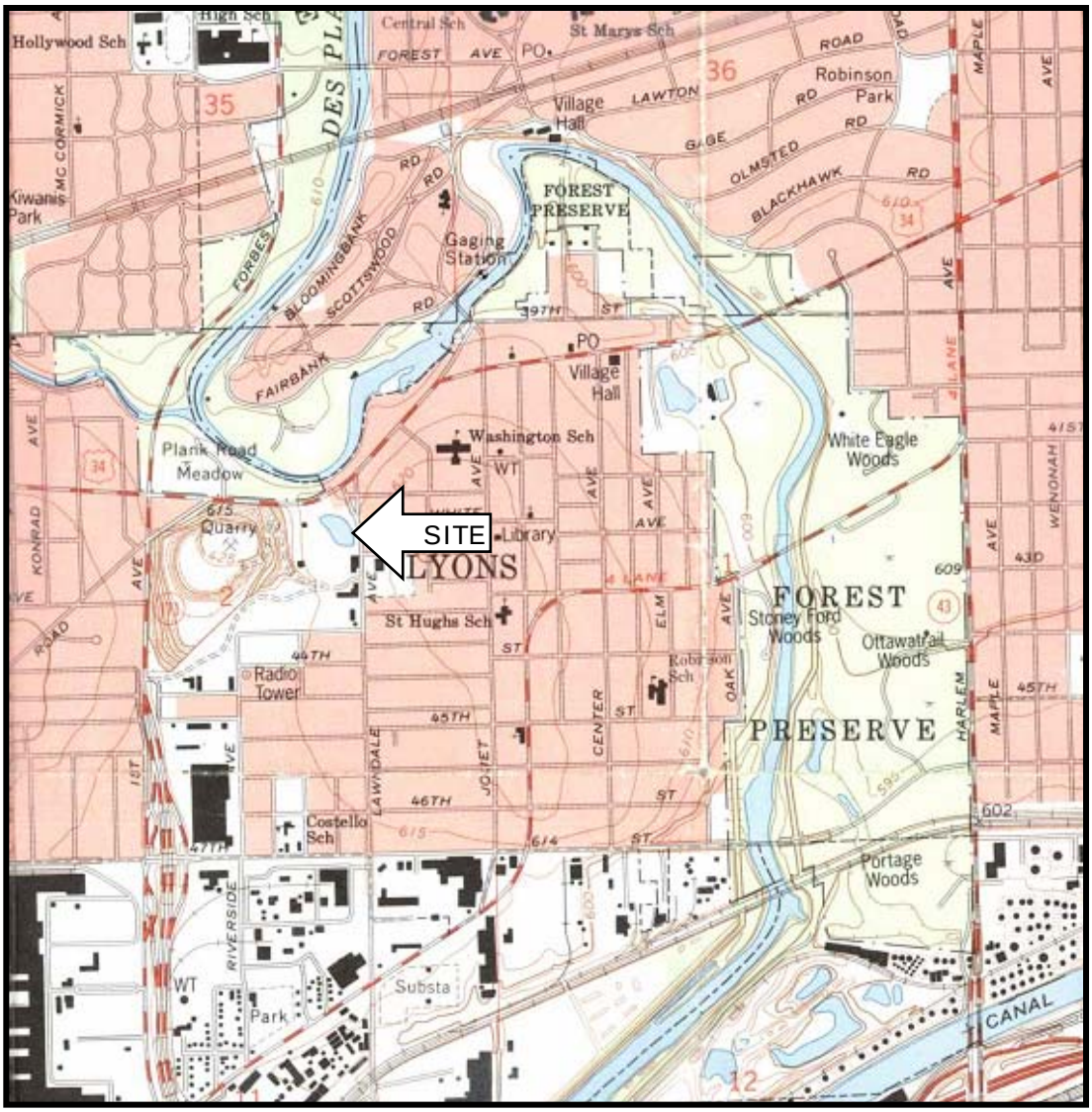
TOC: Top of Casing
BGS: Below Grade Surface
MW: Monitoring Well
SCH: Schedule
PVC: polyvinyl chloride
NA: Not applicable

Prepared By/Date: KAB / 6.11.2007
Checked By/Date: AWB / 6.11.2007

FIGURES

Source: U.S. Geological Survey Quadrangle Berwyn, Illinois. 7.5 Minute Series (Topographic), Dated 1993.
T 38N
R 12E
S 36

N



0 1/4 1/2 1 MILE

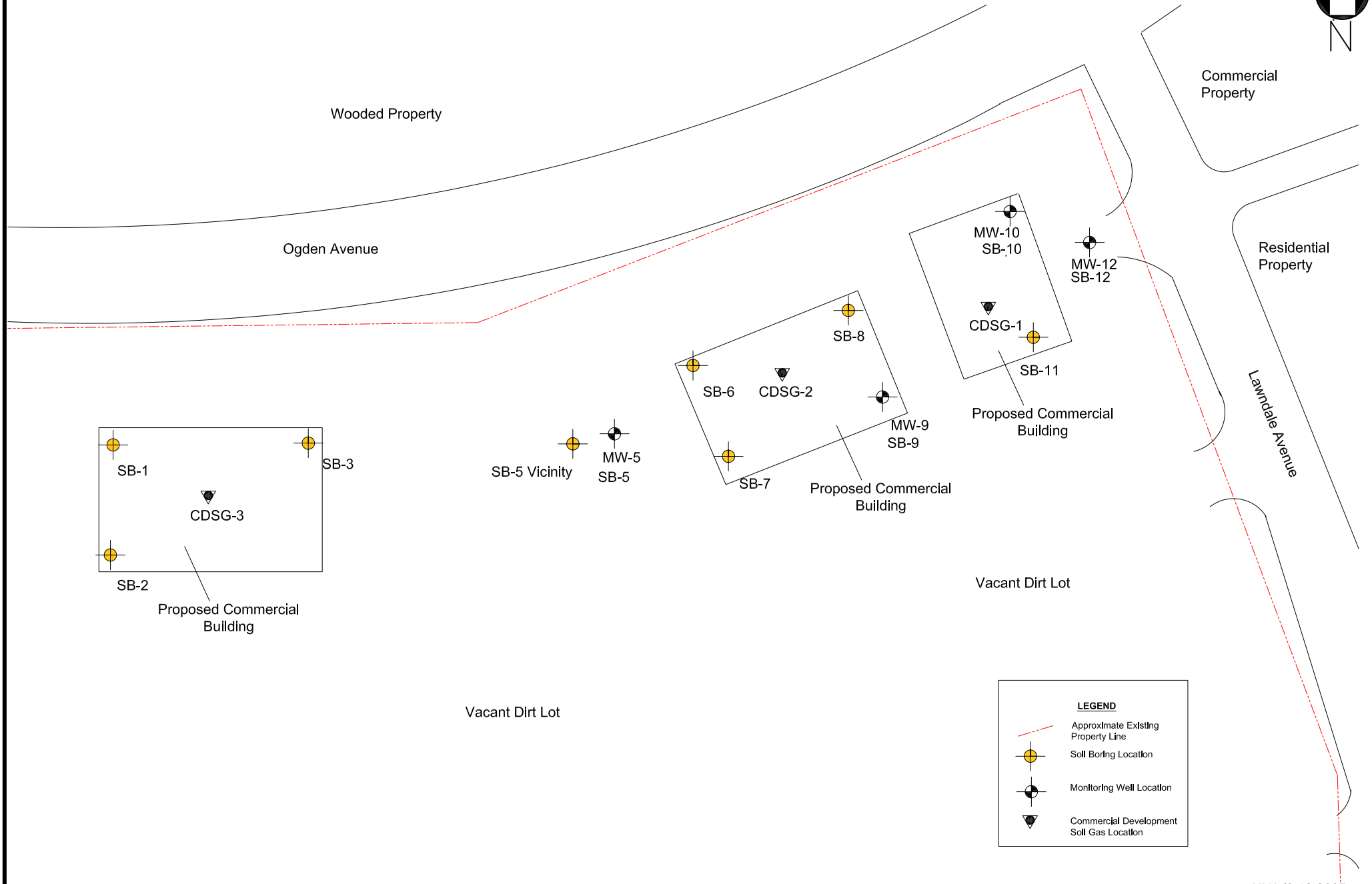
0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: KAB / 6.7.2007
Checked by/Date: KLM / 6.7.2007

Village of Lyons, IL Commercial Development Southwest Corner of Ogden & Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project No. 0253801 Figure 1

Site reconnaissance performed by Ms. Karen Beaman and Mr. Kevin McCartney of BB&J on May 11, 2007.
Reference: Alternate Site Plan #2 by Mackie Consultants, LLC, 2007.

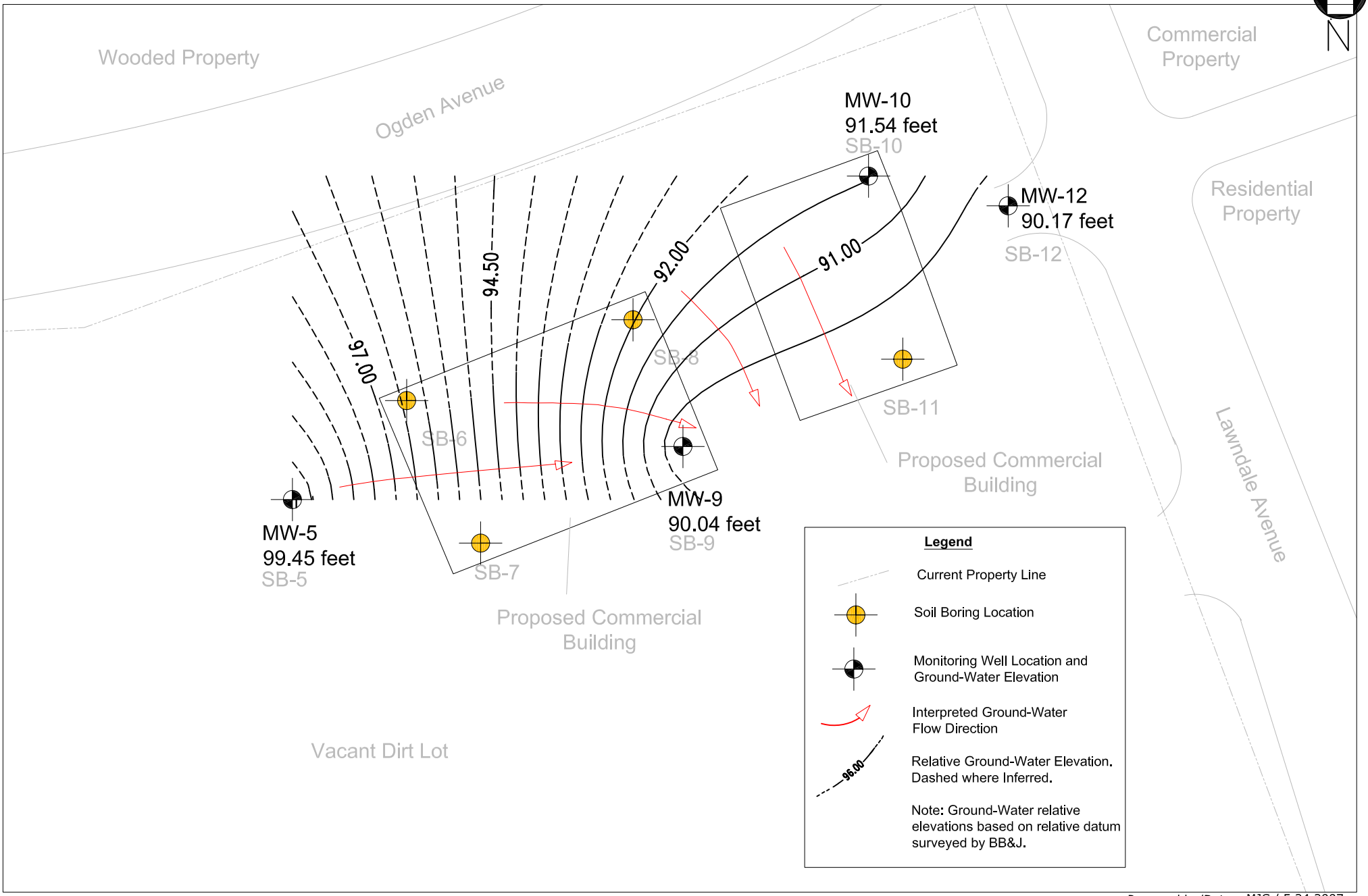


NOT TO SCALE

Prepared by/Date: MLH /3.12.2007
Checked by/Date: AWB /3.12.2007

Village of Lyons Commercial Development Southwest Corner of Ogden & Lawndale Avenues Lyons, Illinois	BRADBURNE, BRILLER & JOHNSON, LLC www.bbjgroup.com	Soil Boring, Monitoring Well, and Soil Gas Locations Project No. 0253801 Figure 2

Site reconnaissance performed by Ms. Karen Beaman and Mr. Michael Couvreur of BB&J on May 18, 2007.
Reference: Alternate Site Plan #2 by Mackie Consultants, LLC, 2007. Ground-water potentiometric map created using Surfer version 6.0.



NOT TO SCALE

Prepared by/Date: MJC / 5.24.2007
Checked by/Date: AWB / 6.11.2007

Village of Lyons
Commercial Development
Southwest Corner of Ogden & Lawndale Avenues
Lyons, Illinois

BRADBURNE, BRILLER & JOHNSON, LLC
www.bbjgroup.com

Ground-Water Potentiometric Map

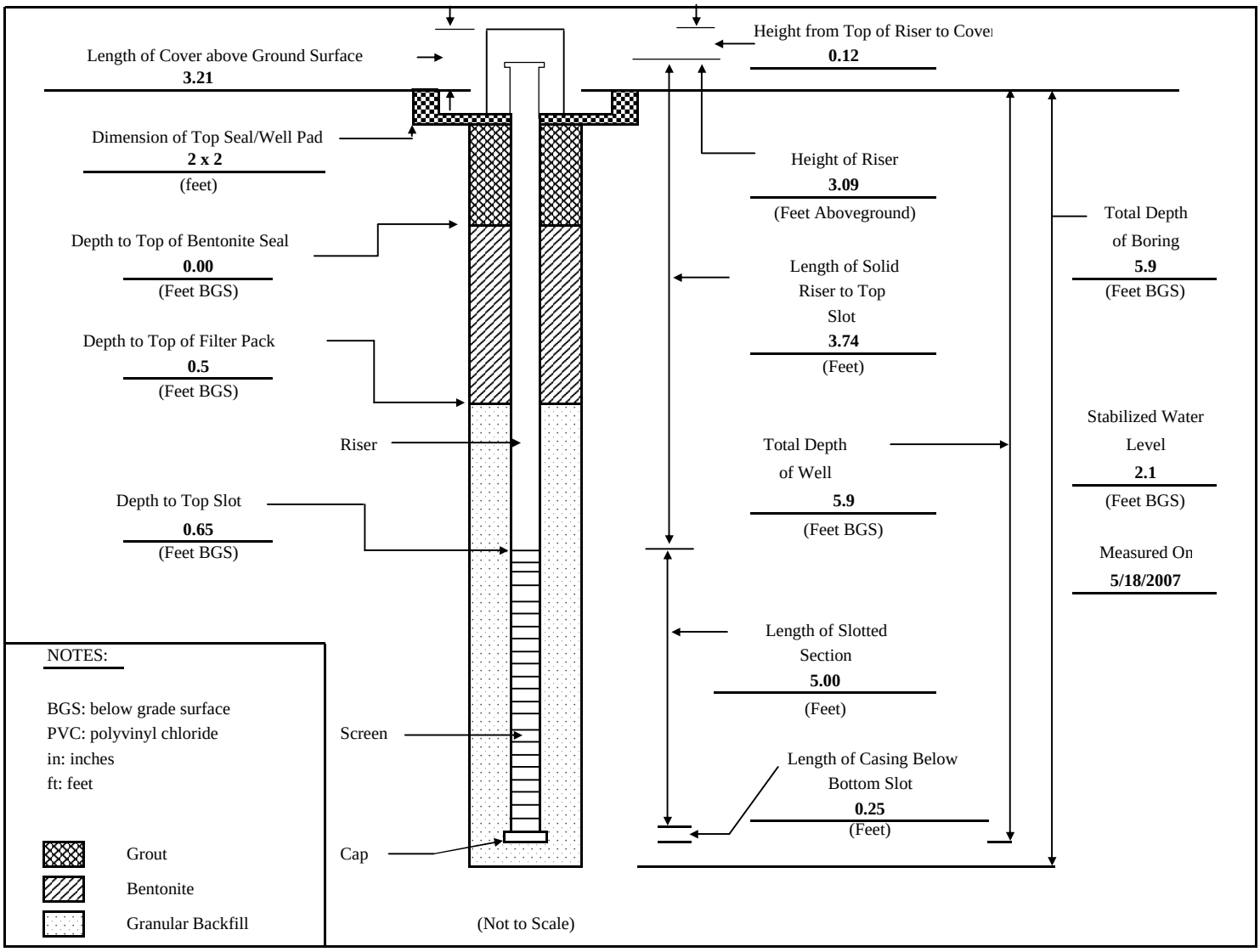
Project No. 0253801

Figure 3

TYPE II MONITORING WELL INSTALLATION DIAGRAM - Stick-Up TYPE

WELL IDENTIFICATION	**MW- 5**	PROJECT NAME	**Lyons - Commercial Development**
		PROJECT NUMBER	**0253801**
		DATE INSTALLED	**5/17/2007**

GROUND SURFACE ELEVATION:	**101.55**	WELL MATERIALS (size or amount, type, manufacturer):	
TOP OF RISER ELEVATION (FT)*:	**104.64**	Riser: **PVC** INSIDE DIA: **2** in.	
ELEVATION REFERENCE:	NGVD **X** SITE DATUM	Screen: **PVC** INSIDE DIA: **2** in.	
DRILLING CONTRACTOR:	**HH Holmes**	SLOT SIZE: **0.10** in.	
DRILLERS NAME:	**Mike & Nick**	Cement:	**No Cement**
DRILLING METHODS:	**Hollow Stem Auger**	Sand:	**#5 Silica Filter Sand**
Diameter Outer: **8.75** in. Inner: **4.25** in.		Bentonite:	**Bentonite Chips**
Depth: **0** to **8** ft.		COVER:	**Steel Stickup Cover**
LOGGED BY:	**Karen Beaman**	CHECKED BY:	**Kevin McCartney**



NOTES:

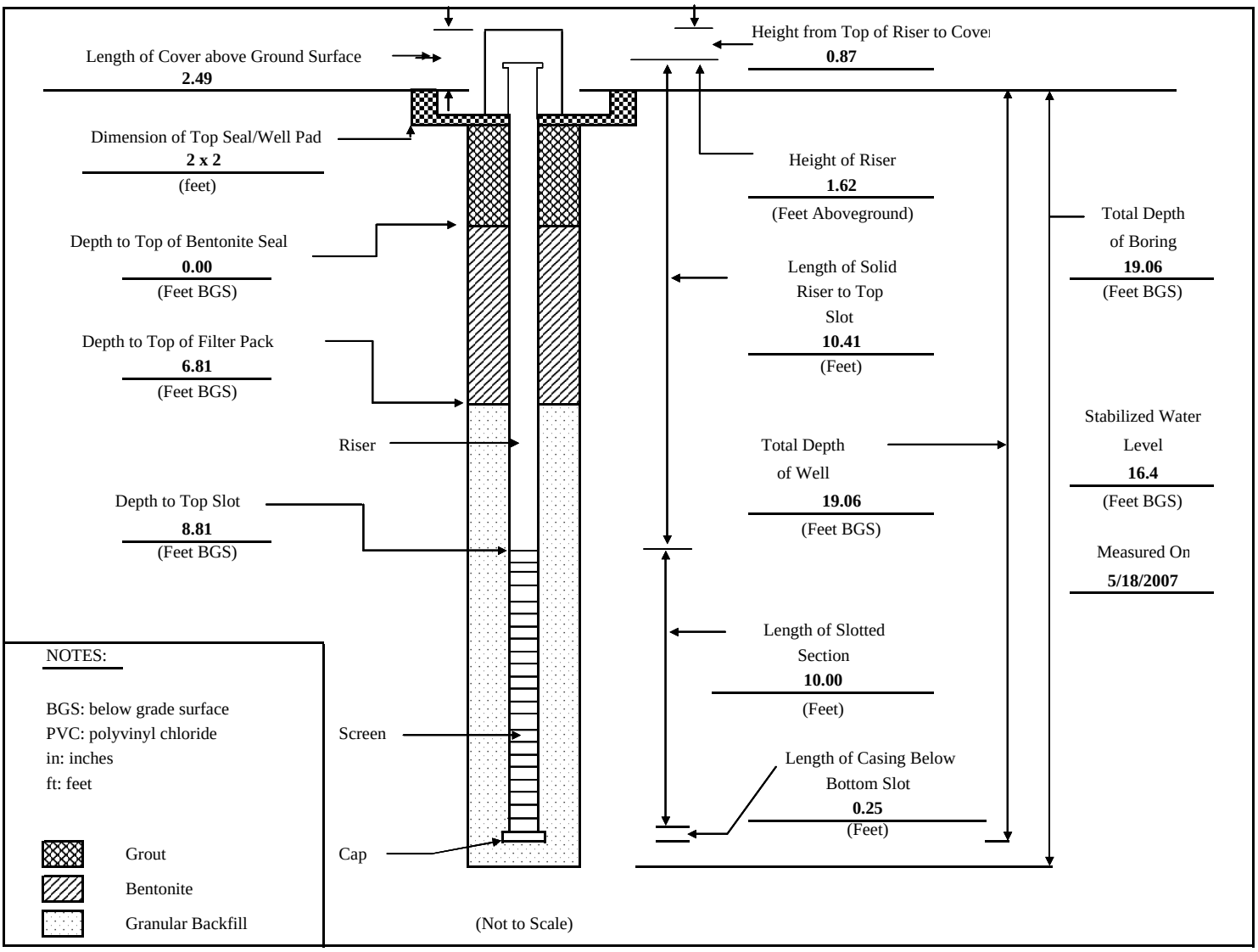
BGS: below grade surface
PVC: polyvinyl chloride
in: inches
ft: feet

GENERAL COMMENTS:

TYPE II MONITORING WELL INSTALLATION DIAGRAM - Stick-Up TYPE

WELL IDENTIFICATION	**MW- 9**	PROJECT NAME	**Lyons - Commercial Development**
		PROJECT NUMBER	**0253801**
		DATE INSTALLED	**5/17/2007**

GROUND SURFACE ELEVATION:	**106.44**	WELL MATERIALS (size or amount, type, manufacturer):	
TOP OF RISER ELEVATION (FT)*:	**108.06**	Riser: **PVC** INSIDE DIA: **2** in.	
ELEVATION REFERENCE:	NGVD **X** SITE DATUM	Screen: **PVC** INSIDE DIA: **2** in.	
DRILLING CONTRACTOR:	**HH Holmes**	SLOT SIZE: **0.10** in.	
DRILLERS NAME:	**Mike & Nick**	Cement:	**No Cement**
DRILLING METHODS:	**Hollow Stem Auger**	Sand:	**#5 Silica Filter Sand**
Diameter Outer: **8.75** in. Inner: **4.25** in.		Bentonite:	**Bentonite Chips**
Depth: **0** to **20** ft.		COVER:	**Steel Stickup Cover**
LOGGED BY:	**Karen Beaman**	CHECKED BY:	**Kevin McCartney**



NOTES:

BGS: below grade surface
PVC: polyvinyl chloride
in: inches
ft: feet

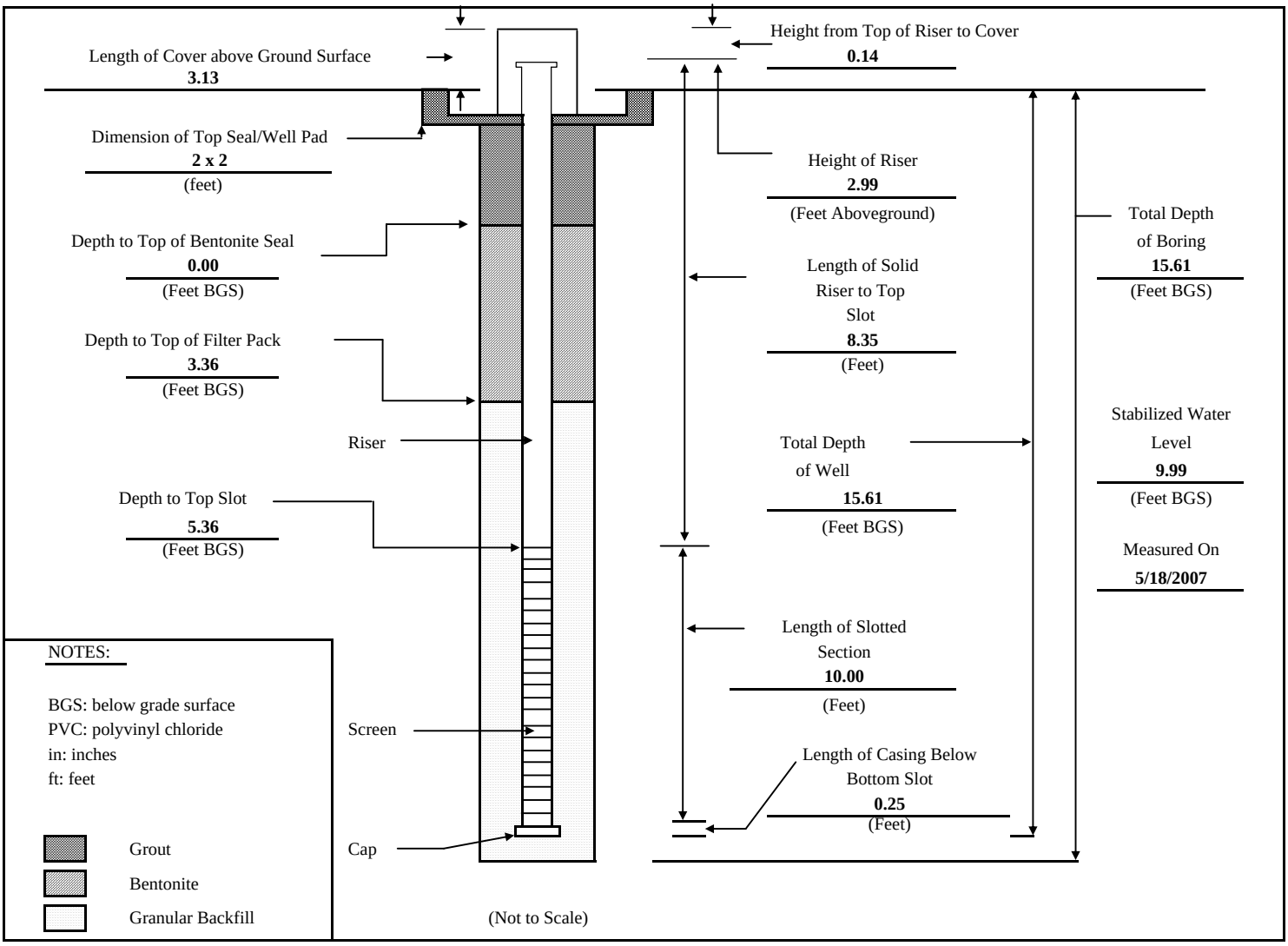
GENERAL COMMENTS:

TYPE II MONITORING WELL INSTALLATION DIAGRAM - Stick-Up TYPE

WELL IDENTIFICATION	**MW- 10**	PROJECT NAME	**Lyons - Commercial Development**
		PROJECT NUMBER	**0253801**
		DATE INSTALLED	**5/17/2007**

GROUND SURFACE ELEVATION: **101.53**
TOP OF RISER ELEVATION (FT)*: **104.52**
ELEVATION REFERENCE: ____ NGVD **X** SITE DATUM
DRILLING CONTRACTOR: **HH Holmes**
DRILLERS NAME: **Mike & Nick**
DRILLING METHODS: **Hollow Stem Auger**
Diameter Outer: **8.75** in. Inner: **4.25** in.
Depth: **0** to **20** ft.
LOGGED BY: **Karen Beaman**

WELL MATERIALS (size or amount, type, manufacturer):
Riser: **PVC** INSIDE DIA: **2** in.
Screen: **PVC** INSIDE DIA: **2** in.
SLOT SIZE: **0.10** in.
Cement: **No Cement**
Sand: **#5 Silica Filter Sand**
Bentonite: **Bentonite Chips**
COVER: **Steel Stickup Cover**
CHECKED BY: **Kevin McCartney**



NOTES:

BGS: below grade surface
PVC: polyvinyl chloride
in: inches
ft: feet

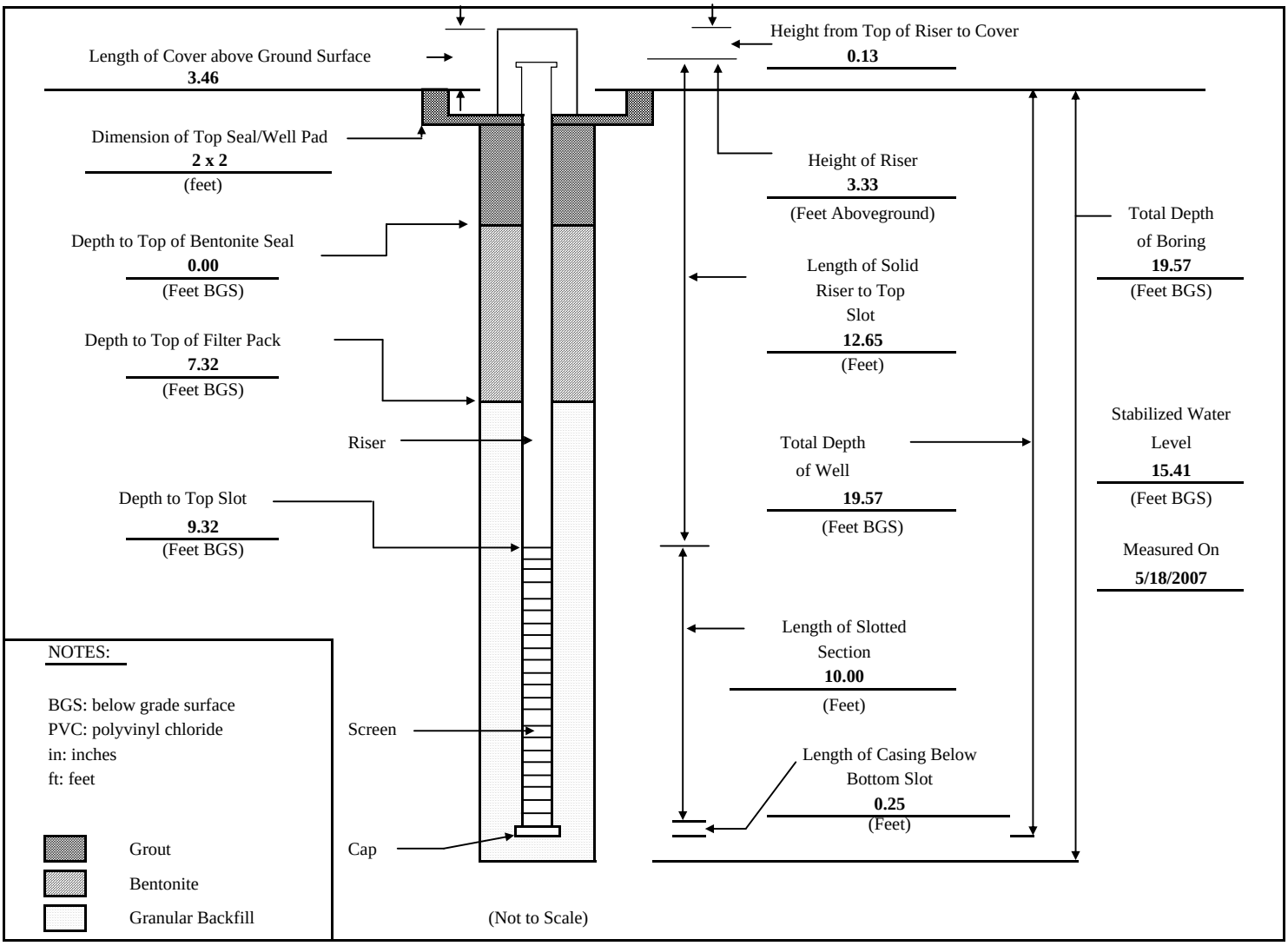
GENERAL COMMENTS:

TYPE II MONITORING WELL INSTALLATION DIAGRAM - Stick-Up TYPE

WELL IDENTIFICATION	**MW- 12**	PROJECT NAME	**Lyons - Commercial Development**
		PROJECT NUMBER	**0253801**
		DATE INSTALLED	**5/17/2007**

GROUND SURFACE ELEVATION: **104.76**
TOP OF RISER ELEVATION (FT)*: **104.64**
ELEVATION REFERENCE: ____ NGVD **X** SITE DATUM
DRILLING CONTRACTOR: **HH Holmes**
DRILLERS NAME: **Mike & Nick**
DRILLING METHODS: **Hollow Stem Auger**
Diameter Outer: **8.75** in. Inner: **4.25** in.
Depth: **0** to **20** ft.
LOGGED BY: **Karen Beaman**

WELL MATERIALS (size or amount, type, manufacturer):
Riser: **PVC** INSIDE DIA: **2** in.
Screen: **PVC** INSIDE DIA: **2** in.
SLOT SIZE: **0.10** in.
Cement: **No Cement**
Sand: **#5 Silica Filter Sand**
Bentonite: **Bentonite Chips**
COVER: **Steel Stickup Cover**
CHECKED BY: **Kevin McCartney**



NOTES:

BGS: below grade surface
PVC: polyvinyl chloride
in: inches
ft: feet

GENERAL COMMENTS:

APPENDIX A

FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

The media targeted by this subsurface assessment and the sampling methods and protocol are described in this appendix.

A.1 Sampling Equipment

The following sampling equipment was used during field activities at the Subject Property:

- Geoprobe® direct-push technology (DPT) sampling equipment
- Rig utilizing a 6.25" auger, split spoon samplers, and capable of air rotary drilling;
- A photo-ionization detector (PID), equipped with an 10.6 electron volt (eV) lamp for field-screening soil samples and for health and safety air monitoring;
- Clean, plastic "Ziplock" bags for use in describing soil samples and for field screening purposes;
- Laboratory-supplied containers for the collection of soil and ground-water samples targeted for laboratory analyses;
- Electronic interface probe for determining depth to ground water and depth to bottom of monitoring well;
- Phosphate-free soap, potable water and distilled water for equipment cleaning;
- Laboratory-supplied deionized water (purge water) for the preparation of quality assurance/quality control (QA/QC) samples;
- Disposable latex and/or nitrile gloves;
- One 55-gallon drum used to collect purge water from permanent monitoring wells;
- Sample shipping containers (e.g., coolers); and,
- Sealed trip blanks, prepared by the laboratory using deionized water and shipped with the sample coolers.

A.2 Soil probe/Soil Probe Advancement and Soil Sampling Procedures

This section describes the various types of soil probe and/or soil probe techniques that were used, as well as specific soil sample collection procedures.

A.2.1 DPT Advancement Procedures

A Geoprobe® DPT sampling machine was used to create borings for the soil gas probes. The machine advances a soil probe by means of a hydraulic hammer that drove the sampler vertically into the ground. Once the boring is created, the 1/4-inch diameter poly tubing and attached soil gas probe can be inserted. Approximately a foot of sand is poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite is poured on top of

each sand pack to preclude the infiltration of hydrated bentonite grout. The probe is then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. At least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

A.2.2 Hollow Stem Auger Procedures

Soil samples are collected using a 1.5-inch diameter, 18-inch steel sampling hollow stem auger. A hydraulic auger, attached to a truck, is used to drill to a desired depth, then a split spoon barrel (SSB) is advanced to the desired depth and a discrete sample is collected.

A.2.3 Soil Sample Screening and Collection Procedures

Upon retrieval, the soil sample was removed from the sampler and visually classified by field personnel. Each soil sample was split into two portions and placed in re-sealable plastic bags. One bag was placed into a cooler with ice, and the other was kept in a warm environment (approximately 70 degrees Fahrenheit or greater) for approximately 10 minutes in an effort to promote volatilization of potential organic vapors within the soil.

After approximately 10 minutes, headspace screening using a PID was performed on the soil sample kept in the warm environment. The PID was calibrated daily in accordance with the manufacturer's directions. After a minimum of 10 minutes within a warm environment, the probe on the PID was inserted into the soil bag, and a sample of headspace air was withdrawn. The maximum reading was recorded in the field book and/or on the soil probe log. Readings were recorded in parts per million, referencing the calibration gas used.

Based on field screening and visual observations, field personnel selected a "worst case" soil sample from each location generally based on the following criteria:

- The soil sample that exhibited the highest PID screening results; and/or,
- Appeared to exhibit the most prominent staining; and/or,
- Exhibited the strongest potential chemical odor (or, in the absence of an apparent chemical odor, the strongest anomalous odor, as noted).

The selected soil sample's corresponding soil bag contained in the cooler on ice was then packed in the appropriate laboratory-supplied containers for shipment to the laboratory for chemical analysis.

The soil contained in the soil bag used for field screening also was used for classification. The soil was visually classified by the on-site field personnel in accordance with American Society for Testing and Materials (ASTM) D 2488-93 and described on the appropriate field sampling form(s).

A.2.4 Ground-Water Sample Collection Procedures

Monitoring well covers are removed using a socket wrench. Prior to sampling, ground water is purged from each permanent monitoring well using a 1.5-inch by 3.5-foot plastic, disposable bailer. The purged water is put into a 5-gallon bucket and ultimately disposed of in a 55-gallon drum and treated as waste. Upon collection, the ground-water samples are placed into pre-cleaned, laboratory-supplied containers with the proper preservative(s). Sampling was performed wearing clean, disposable latex or nitrile gloves.

A.3 Probehole Abandonment

Following the advancement of the soil probes, the probeholes were backfilled with bentonite chips to approximately 6 inches below ground surface (bgs) inside the Subject Property. The surface above the probehole was then patched with asphalt or concrete, as necessary, to restore the original surface.

A.4 Quality Assurance/Quality Control

The following sections outline QA/QC protocol, sample containers, sample preservation, sample identification and chain-of-custody procedures implemented during sampling activities.

A.4.1 QA/QC Samples

Trip Blanks

Trip blank samples that consisted of de-ionized water, provided by the analytical laboratory, accompanied the cooler(s) containing the samples from the laboratory, to the field and back to the laboratory. The trip blanks were used to assess potential cross-contamination from the cooler and handling practices, in addition to assessing potential cross-contamination between samples. Trip blanks will be analyzed for BTEX only. One trip blank will be analyzed per cooler.

Equipment Rinsates

Equipment rinsates were collected to evaluate potential cross-contamination of samples during equipment cleaning procedures. The frequency of equipment rinsates was either one per every 20 samples of a particular media sampled (e.g., soil, ground water, etc.) or one for each type of sampling equipment used. The equipment rinsates were collected by pouring deionized water provided by the laboratory over the sampling equipment and into sample containers. The equipment rinsates were shipped with the soil and/or ground-water samples collected that day and were analyzed for the same suite of potential constituents of concern (COCs) as the environmental samples.

A.4.2 Sample Containers and Preservation

Sample containers prepared by a commercial vendor were provided by the laboratory.

A.4.3 Sample Identification

Prior to sample collection, the appropriate container (with preservative, if applicable) was labeled with the following information:

- Sample identification;
- Initials of collector;
- Date and time of collection;
- Analytical parameters requested; and,
- Preservative used.

Samples were packed in coolers (with containerized ice) complete with custody seals and transported via overnight courier to the laboratory. Chain-of-custody documentation outlined as follows accompanied each shipment of samples to the laboratory.

A.4.4 Chain-of-Custody Procedures

Chain-of-custody began when the pre-cleaned sample containers arrived in the field in coolers with signed and dated custody seals. At the time of sample collection, the labeled samples were placed into an iced cooler. A line-item chain-of-custody form was then completed by the sampler. Chain-of-custody allowed the samples to be traced from the time of collection to their receipt in the laboratory. Upon completion of all line items, the sampler signed, dated, listed the time, and checked the completeness of all descriptive information contained on the form. One copy of the completed chain-of-custody was retained by the sampler. Each individual who subsequently assumed responsibility for the samples signed the chain-of-custody record. The following items were included on the chain-of-custody form:

- Sample identification;
- Signature of sampler;
- Date and time of collection;
- Sample type (i.e., aqueous or soil);
- Sample location;
- Number, size, and type of containers;
- Analytical parameters requested;
- Preservative (where applicable);
- Signatures of personnel involved in the chain of possession; and,
- Dates and times of relinquishment and receipt.

A.5 Cleaning and Disposal of Investigation-Derived Wastes (IDW)

Cleaning procedures were employed to minimize the potential for cross-contamination, off-site migration of potential COCs, and personal exposure to COCs. Solid materials and fluids generated during site assessment activities were containerized on-site. The following sections summarize cleaning procedures and disposal of IDW.

A.5.1 Equipment Cleaning

Equipment involved in field sampling activities was cleaned prior to probehole advancement, sampling, or leaving the Subject Property. During soil sampling, cleaning of the sampling equipment was conducted between each sample interval and included the following:

- Removal of visible sediment using brush and non-phosphate soap and potable water mixture; and,
- Potable water rinse.

A.6 Record Keeping

BB&J field personnel documented the field activities (with corresponding times) and pertinent information in a dedicated project filed logbook. Information that was recorded included: the names and companies of on-site personnel (BB&J, client, subcontractors, etc), weather conditions, and the purpose of activities and details of the fieldwork (e.g., soil conditions, sampling depths, etc.).

APPENDIX B

SOIL BORING LOGS

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-1	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	5 feet
Auger Depth	3.5 feet	Rotary Depth	N/A
Date Started	5/15/2007	Date Finished	5/15/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1			1	A	G					No topsoil
2	FILL: Stiff brown sandy clay with gravel; damp		2			18		10 13 16	13.9	Sampled 1-2.5 feet bgs
3			3	B	G			29		
4	FILL: Stiff brown and black sandy clay with lots of gravel; damp		4			18		10 21 24	5.0	Sampled 3.5-5 feet bgs
5			5	C	G					Auger Refusal (believed to be top of bedrock)
6	Auger Refusal at 5 feet bgs		6					45		
7			7	D	G					
8			8							
9			9	E	G					
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14			14							
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-2	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	6 feet
Auger Depth	3.5 feet	Rotary Depth	N/A
Date Started	5/15/2007	Date Finished	5/15/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Semi-stiff brown silty clay with some gravel; damp		1	A	G					No topsoil
2			2			18		2 10 4	23.6	Sampled 1-2.5 feet bgs
3	FILL: Soft tan and brown sandy clay with trace gravel; damp		3	B	G			14		
4			4			18		4 3 4	12.5	Sampled 3.5-5 feet bgs
5			5	C	G					
6	Auger Refusal at 6 feet bgs		6					7 50/2		Auger Refusal (believed to be top of bedrock)
7			7	D	G					
8			8							
9			9	E	G					
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14			14							
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Copyright: Bradburne, Briller & Johnson, LLC Version 1.0 10/25/06

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-3	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	15 feet
Auger Depth	13.5 feet	Rotary Depth	N/A
Date Started	5/15/2007	Date Finished	5/15/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Stiff brown sandy clay with some gravel; damp		1	A	G					
2			2			18		4 15 29	0.4	Sampled 1-2.5 feet bgs
3	FILL: Stiff tan silty clay with gravel; damp		3	B	G			44		
4	FILL: Loose black and white sand with gravel; damp		4			18		10 18 15	1.3	Petroleum odor Sampled 3.5-5 feet bgs
5			5	C	G					
6	FILL: Stiff brown sandy clay with some gravel; damp		6					33		
7			7	D	G	18		3 5 7	0.4	Sampled 6-7.5 feet bgs
8			8					12		
9			9	E	G	18		4 4 6	0.2	Sampled 8.5-10 feet bgs
10			10							
11			11	F	G			10		Minor staining/rusting from 6-15 feet bgs
12			12							
13			13	G	G					
14			14					2		
15			15	H	G	18		5 25	58	Sampled 13.5-15 feet bgs
16	No Recovery		16					30		
17			17	I						
18			18							
19			19	J				50/4		Auger Refusal (believed to be top of bedrock)
	Auger Refusal at 19 feet bgs									
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-5	Monitor Well No.	MW-5
Surface Elev.	N/A	Completion Depth	8 feet
Auger Depth	6 feet	Rotary Depth	N/A
Date Started	5/17/2007	Date Finished	5/17/2007

UTM (or State Plane) Coordinates

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Drill Rig w/Geoprobe®

**NGVD: National Geodetic Vertical Datum

BB&J Personnel

G - Michele Hargreaves, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Loose black sand with gravel; damp		1	A	G					No topsoil
2			2			18		N/A	N/A	No sample from 1-2.5 feet bgs
3	FILL: Loose black sand; saturated		3	B	G					
4			4			18		4	5.5	Sampled 3.5-5 feet bgs
5			5	C	G					
6			6							
7	FILL: Stiff dark brown clay; damp		7	D	G	18		50/1	1.1	Sampled 6-7.5 feet bgs Orange rocks found at 7 feet bgs
8			8							Ground-water encountered at 8 feet
9	Auger Refusal at 8 feet bgs		9	E	G					Auger Refusal (believed to be top of bedrock)
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14			14							
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		
UTM (or State Plane) Coordinates			
N. (x)		E.(y)	
Latitude	41 ° 48 ' 53 "	Longitude	87 ° 49 ' 38 "
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Boring No.	SB-6	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	38 feet
Auger Depth	33.5 feet	Rotary Depth	N/A
Date Started	5/15/2007	Date Finished	5/15/2007

**NGVD: National Geodetic Vertical Datum

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Loose tan sand; damp		1	A	G					
2			2			18		4 7 27	4.7	Sampled 1-2.5 feet bgs Petroleum odor
3			3	B	G			34		
4	FILL: Loose gray sand with gravel; damp		4			18		15 22 36	2.4	Sampled 3.5-5 feet bgs
5			5	C	G			58		
6			6							
7			7	D	G	18		7 9 5	2.1	Sampled 6-7.5 feet bgs
8			8					14		
9			9	E	G	18		3 2 3	0.5	Sampled 8.5-10 feet bgs
10			10							
11			11	F	G			5		Minor staining/rusting from 6-38 feet bgs
12			12							
13	FILL: Stiff brown and black clay with gravel; damp		13	G	G					
14			14			18		3 4 4	6.4	Sampled 13.5-15 feet bgs
15			15	H	G			8		
16			16							
17			17	I						
18			18							
19			19	J		18		3 3 3 6	18	Sampled 18.5-20 feet bgs
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Copyright: Bradburne, Briller & Johnson, LLC Version 1.0 10/25/06

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-6	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	38 feet
Auger Depth	33.5 feet	Rotary Depth	N/A
Date Started	5/15/2007	Date Finished	5/15/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	FILL: Stiff brown and black clay with gravel; damp		21	A	G					
22			22							
23			23	B	G					
24	FILL: Medium stiff brown clay with trace sand and gravel; damp		24			18		3	1.2	Sampled 23.5-25 feet bgs
25			25	C	G			3		
26			26					6		
27			27	D	G					
28			28							
29	FILL: Soft brown clay with trace black rocks; damp		29	E	G	18		3	0.6	Sampled 28.5-30 feet bgs
30			30					4 6		
31			31	F	G			10		
32			32							
33			33	G	G					
34	FILL: Soft brown sandy clay with some gravel; damp		34			18		8	0.4	Sampled 33.5-35 feet bgs
35			35	H	G			9 10		
36			36					19		
37			37	I						
38			38					60/4		Auger Refusal (believed to be top of bedrock)
39	Auger Refusal at 38 feet bgs		39	J						
40			40							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-7	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	60 feet
Auger Depth	58.5 feet	Rotary Depth	N/A
Date Started	5/14/2007	Date Finished	5/14/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Loose gray and brown clay; damp		1	A	G					
2			2			18		8 28 31	N/A	Sampled 1-2.5 feet bgs
3			3	B	G			59		
4			4			18		5 43	N/A	No sample from 3.5-5 feet bgs
5			5	C	G			N/A		
6	FILL: Stiff black silty clay with ash; damp		6					43		
7			7	D	G	18		13 14 11	35.4	Sampled 6-7.5 feet bgs
8	FILL: Semi-stiff black with blue silty clay with ash; damp		8					25		
9			9	E	G	18		4 6	7.1	Sampled 8.5-10 feet bgs
10			10					7		
11	No recovery		11	F	G			13		
12			12							
13			13	G	G					
14	FILL: Semi-stiff black silty clay with ash; damp		14			18		8 5	N/A	No sample from 13.5 to 15 feet bgs
15			15	H	G			5		
16			16					10		
17			17	I						
18			18							
19			19	J		18		7 4	N/A	No sample from 18.5 to 20 feet bgs
20			20					20 24		

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-7	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	60 feet
Auger Depth	58.5 feet	Rotary Depth	N/A
Date Started	5/14/2007	Date Finished	5/14/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	FILL: Semi-stiff black silty clay with ash; damp		21	A	G					
22			22							
23			23	B	G					
24			24			18		15	N/A	Sampled 23.5-25 feet bgs
25			25	C	G			16 6		
26			26					22		
27			27	D	G					
28			28							
29	FILL: Medium-stiff brown clay with trace sand; damp		29	E	G	18		5	N/A	No sample from 28.5 to 30 feet bgs
30			30					8 10		
31			31	F	G			18		
32			32							
33			33	G	G					
34			34			18		3	3.6	Sampled 33.5-35 feet bgs
35			35	H	G			3 5		
36			36					8		
37			37	I						
38			38							
39			39	J		18		3	10.0	Sampled 38.5-40 feet bgs
40			40					5 6 11		

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-7	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	60 feet
Auger Depth	58.5 feet	Rotary Depth	N/A
Date Started	5/14/2007	Date Finished	5/14/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
41	FILL: Medium-stiff brown clay with trace sand; damp		41	A	G					
42			42							
43			43	B	G					
44			44			18		3		
45			45	C	G			6 15	16.7	Sampled 43.5-45 feet bgs Petroleum odor and some ash
46			46					21		
47			47	D	G					
48			48							
49	Very soft tan sandy CLAY (CL), damp		49	E	G			8		
50			50			18		7 4	26.1	Sampled 48.5-50 feet bgs Cement/Paint-like substance observed at 50 feet bgs
51			51	F	G			11		
52			52							
53			53	G	G					
54			54			18		7		
55			55	H	G			2 12	N/A	No sample from 53.5 to 55 feet bgs
56			56					14		
57			57	I						
58			58							
59			59	J				6		Sampled 58.5-60 feet bgs
60			60			18		60/4	13.0	Auger Refusal (believed to be top of bedrock)

Auger Refusal at 60 feet bgs

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-8	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	40 feet
Auger Depth	38.5 feet	Rotary Depth	N/A
Date Started	5/14/2007	Date Finished	5/14/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Dense black clay with ash and sand, very rocky; damp		1	A	G					
2			2			18		N/A	N/A	No sample from 1 to 2.5 feet bgs
3			3	B	G					
4	FILL: Loose white gravel; damp		4			18		15	1.1	Sampled 3.5-5 feet bgs
5			5	C	G			13 11		
6	FILL:Loose gray and light brown clay with gravel; damp		6					24		
7			7	D	G	18		21 49 28	4.2	Sampled 6-7.5 feet bgs
8	FILL:Loose brown sandy clay with gravel; damp		8					77		
9			9	E	G	18		10	0.6	Sampled 8.5-10 feet bgs
10			10					10 5		Glass debris observed
11	No recovery		11	F	G			15		
12			12							
13			13	G	G					
14			14			18		2	N/A	No sample from 13.5 to 15 feet bgs
15			15	H	G			4 5		
16			16					9		
17			17	I						
18			18							
19	FILL: Medium dense brown sandy clay; damp		19	J		18		3	0.8	Sampled 18.5-20 feet bgs
20			20					4 4 8		Petroleum odor

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-8	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	40 feet
Auger Depth	38.5 feet	Rotary Depth	N/A
Date Started	5/14/2007	Date Finished	5/14/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	Soft brown CLAY (CL), moist		21	A	G					
22			22							
23			23	B	G					
24			24			18		2 4 3 7	14	Sampled 23.5-25 feet bgs
25			25	C	G					
26			26							
27			27	D	G					
28			28							
29	Medium stiff brown CLAY (CL), with some gravel, mois		29	E	G	18		2 3 3 6	8	Sampled 28.5-30 feet bgs
30			30							
31			31	F	G					
32			32							
33			33	G	G					
34			34			18		2 3 4 7	34	Sampled 33.5-35 feet bgs
35	Medium stiff brown and green-orange CLAY (CL), with trace gravel, moist		35	H	G					
36			36							
37			37	I						
38			38							
39			39	J		18		3 5 7 13	1.4	Sampled 38.5-40 feet bgs
40	Auger Refusal at 40 feet bgs		40							Auger Refusal (believed to be top of bedrock)

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-9	Monitor Well No.	MW-9
Surface Elev.	N/A	Completion Depth	20 feet
Auger Depth	18.5 feet	Rotary Depth	N/A
Date Started	5/17/2007	Date Finished	5/17/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Loose brown sandy gravel; damp		1	A	G					
2	FILL: Loose white and gray gravel; damp		2			18		50	7.6	Sampled 1-2.5 feet bgs
3			3	B	G					
4	FILL: Stiff brown clay with some gravel; damp		4			18		48	0.6	Sampled 3.5-5 feet bgs
5			5	C	G					
6			6							
7	FILL: Loose white and gray gravel; damp		7	D	G	18		35	2.5	Sampled 6-7.5 feet bgs
8			8							
9			9	E	G	18		19	1.1	Sampled 8.5-10 feet bgs
10	FILL: Loose black asphalt; damp		10							
11	No recovery		11	F	G					
12			12							
13			13	G	G					
14	Loose, light brown SAND (SP), damp		14			18		12	1.2	Sampled 13.5-15 feet bgs
15			15	H	G					
16			16							
17			17	I						
18			18							Ground-water encountered at 18 feet bgs
19			19	J		18		87/1	1.6	Sampled 18.5-20 feet bgs
20	Soft brown sandy CLAY (SC), with gravel, damp		20							Auger Refusal (believed to be top of bedrock)

Auger Refusal at 20 feet bgs

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-10	Monitor Well No.	MW-10
Surface Elev.	N/A	Completion Depth	20 feet
Auger Depth	18.5 feet	Rotary Depth	N/A
Date Started	5/17/2007	Date Finished	5/17/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Loose white and light brown clay, with gravel; damp		1	A	G					
2			2			18		10 20 15	N/A	No sample from 1-2.5 feet bgs
3			3	B	G			13		
4	FILL: Semi-dense black clayey sand; damp		4			18		5 7 8	N/A	No sample from 3.5-5 feet bgs Petroleum odor
5			5	C	G					
6	FILL: Medium soft brown clay with trace sand; damp		6					15		
7			7	D	G	18		4 3 3	0.3	Sampled 6-7.5 feet bgs
8	Loose tan SAND (SP), moist		8					6		
9			9	E	G	18		7 11 15	2.2	Sampled 8.5-10 feet bgs
10			10							
11			11	F	G			26		
12			12							
13			13	G	G					Ground-water encountered at 13 feet bgs
14			14			18		N/A	0.2	Sampled 13.5-15 feet bgs
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J				7		Sampled 18.5-20 feet bgs
20			20					4 20	0.5	Auger Refusal (believed to be top of bedrock)
	Auger Refusal at 20 feet bgs							24		

NOTES:

NA:	Not Applicable	G:	Grab	PTR:	Penetrometer	P:	Damp	S:	Saturated
No:	Number	C:	Composite	ppm:	parts per million	M:	Moist	OV:	Organic Vapors
NM:	Not Measured	bgs:	below ground surface	D:	Dry	W:	Wet		
Elev:	Elevation	Fed:	Federal	ID:	Identification	H:	Helper		Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	SB-11	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	22 feet
Auger Depth	18.5 feet	Rotary Depth	N/A
Date Started	5/17/2007	Date Finished	5/17/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Very stiff brown sandy clay, with some gravel; damp		1	A	G					
2			2			18		61	0.4	Sampled 1-2.5 feet bgs
3			3	B	G					
4	FILL: Stiff gray sandy clay, with some gravel; damp		4			18		NA	1.3	Sampled 3.5-5 feet bgs
5			5	C	G					
6	FILL: Stiff black and gray silty clay; damp		6							
7			7	D	G	18		6	0.4	Sampled 6-7.5 feet bgs
8			8							
9			9	E	G	18		6	0.2	Sampled 8.5-10 feet bgs
10			10							
11	FILL: Very stiff brown sandy clay, with some gravel; dam		11	F	G					
12			12							
13			13	G	G					
14			14							
15			15	H	G	18		27	58	Sampled 13.5-15 feet bgs
16	FILL: Medium dense brown and gray silty clay; damp		16							
17			17	I						
18			18							
19	FILL: Dense brown silty sand; moist		19	J		18				Sampled 18.5-20 feet bgs
20			20					48		Auger Refusal (believed to be top of bedrock)

Auger Refusal at 22 feet bgs

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	Lyons Landfill - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	GP-12	Monitor Well No.	MW-12
Surface Elev.	N/A	Completion Depth	20 feet
Auger Depth	18.5 feet	Rotary Depth	N/A
Date Started	5/17/2007	Date Finished	5/17/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J
G - Karen Beaman, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
										No topsoil
1	FILL: Loose white gravel; moist		1	A	G					
2			2			18		61	24	Sampled 1-2.5 feet bgs
3			3	B	G					
4	FILL: Loose tan and brown sandy gravel; damp		4			18		N/A	4.9	Sampled 3.5-5 feet bgs Petroleum odor
5			5	C	G					
6	FILL: Loose white gravel; damp		6							
7	FILL: Semi-stiff tan sandy clay; damp		7	D	G	18		6	2.1	Sampled 6-7.5 feet bgs
8	FILL: Soft black clay; damp		8							
9			9	E	G	18		6	9.1	Sampled 8.5-10 feet bgs
10	Soft greenish-black clay FILL, damp		10							
11	FILL: Soft black clay; damp		11	F	G					
12			12							
13			13	G	G					
14	Loose tan SAND (SP), mosit		14			18		27	9	Sampled 13.5-15 feet bgs
15			15	H	G					
16			16							
17			17	I						
18			18							
19	Loose gray SAND (SP), wet		19	J		18		50	1.2	Groundwater encountered at 19 feet bgs Auger Refusal (believed to be top of bedrock)
20			20							

Auger Refusal at 20 feet bgs

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

APPENDIX C

LABORATORY ANALYTICAL REPORTS

MOBILE GEOCHEMISTRY

H&P

24 May 2007

Mr. Kevin McCartney
Bradburne, Briller & Johnson, LLC - Chicago
515 N. State Street, Suite 2200
Chicago, IL 60610
RE: BBJ051507-11

Enclosed are the results of analyses for samples received by the laboratory on 15-May-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

2470 Impala Drive, Carlsbad, California 92010 | 760.804.9678 — Fax 760.804.9159
3825 Industry Avenue, Lakewood, California 90712 | 562.426.6991 — Fax 562.426.6995
www.HandPmg.com | 1-800-834-9888

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253801 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CDSG-1	E705046-04	Vapor	11-May-07	15-May-07
CDSG-2	E705046-05	Vapor	11-May-07	15-May-07
CDSG-3	E705046-06	Vapor	11-May-07	15-May-07

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253801 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-1 (E705046-04) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	11	10	ppmv	1	EE71506	15-May-07	15-May-07	Modified EPA 8015B	
CDSG-2 (E705046-05) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	1100	10	ppmv	1	EE71506	15-May-07	15-May-07	Modified EPA 8015B	
CDSG-3 (E705046-06) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	18000	20	ppmv	2	EE71506	15-May-07	15-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-1 (E705046-04) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	17	10	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	120	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	6.8	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	27	5.0	"	"	"	"	"	"	
n-Hexane	25	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	15	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	51	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	18	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-1 (E705046-04) Vapor Sampled: 11-May-07 Received: 15-May-07									
2-Hexanone	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	16	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	6.6	5.0	"	"	"	"	"	"	
m,p-Xylene	15	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	6.8	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*80-120*		"	"	"	"	
CDSG-2 (E705046-05) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	1600	100	ug/m³ Air	10	EE72302	22-May-07	23-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	1	"	"	22-May-07	"	
Chloromethane	34	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	620	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-2 (E705046-05) Vapor Sampled: 11-May-07 Received: 15-May-07									
Carbon disulfide	260	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	160	5.0	"	"	"	"	"	"	
n-Hexane	180	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	6.4	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	330	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	89	5.0	"	"	"	"	"	"	
n-Heptane	86	5.0	"	"	"	"	"	"	
Trichloroethene	29	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	5.8	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	78	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	1500	25	"	5	"	"	23-May-07	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	1	"	"	22-May-07	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	13	5.0	"	"	"	"	"	"	
m,p-Xylene	28	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	11	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-2 (E705046-05) Vapor Sampled: 11-May-07 Received: 15-May-07									
1,3,5-Trimethylbenzene	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
1,2,4-Trimethylbenzene	12	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*96.5 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*103 %*	*80-120*		*"*	*"*	*"*	*"*	
CDSG-3 (E705046-06) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	1500	10	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	E
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	110	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	250	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	6.1	5.0	"	"	"	"	"	"	
2-Butanone	68	5.0	"	"	"	"	"	"	
n-Hexane	240	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	30	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CDSG-3 (E705046-06) Vapor Sampled: 11-May-07 Received: 15-May-07									
1,2-Dichloroethane	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
Benzene	58	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	270	5.0	"	"	"	"	"	"	
n-Heptane	74	5.0	"	"	"	"	"	"	
Trichloroethene	11	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	16	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	49	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	12	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	9.5	5.0	"	"	"	"	"	"	
m,p-Xylene	19	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	12	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253801 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Methane by GC/FID - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE71506 - GC										
Blank (EE71506-BLK1)				Prepared & Analyzed: 15-May-07						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
Blank (EE72302-BLK1)				Prepared & Analyzed: 22-May-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
Blank (EE72302-BLK1)				Prepared & Analyzed: 22-May-07						
4-Methyl-2-pentanone	ND	5.0	ug/m³ Air							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*110*		*"*	*103*		*107*	*80-120*			
Surrogate: Toluene-d8	*98.3*		*"*	*96.2*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*173*		*"*	*182*		*95.1*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253801 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
LCS (EE72302-BS1)				Prepared & Analyzed: 22-May-07						
Propene	36.3	10	ug/m³ Air	35.0		104	65-135			
Dichlorodifluoromethane	115	10	"	101		114	65-135			
Chloromethane	46.9	5.0	"	42.0		112	65-135			
Dichlorotetrafluoroethane	159	10	"	142		112	65-135			
Vinyl chloride	59.8	5.0	"	52.0		115	65-135			
Bromomethane	87.6	5.0	"	79.2		111	65-135			
Chloroethane	61.5	5.0	"	53.6		115	65-135			
Trichlorofluoromethane	141	5.0	"	113		125	65-135			
Acetone	57.5	20	"	48.4		119	65-135			
1,1-Dichloroethene	81.5	5.0	"	80.8		101	65-135			
1,1,2-Trichlorotrifluoroethane	143	10	"	155		92.3	65-135			
Methylene chloride	68.4	5.0	"	70.8		96.6	65-135			
Carbon disulfide	67.3	5.0	"	63.2		106	65-135			
trans-1,2-Dichloroethene	81.5	5.0	"	80.8		101	65-135			
Methyl tert-butyl ether	73.2	5.0	"	73.6		99.5	65-135			
Vinyl acetate	74.3	5.0	"	72.0		103	65-135			
1,1-Dichloroethane	81.5	5.0	"	82.4		98.9	65-135			
2-Butanone	64.0	5.0	"	60.0		107	65-135			
n-Hexane	76.7	5.0	"	72.0		107	65-135			
cis-1,2-Dichloroethene	78.8	5.0	"	80.0		98.5	65-135			
Ethyl acetate	53.2	5.0	"	73.6		72.3	65-135			
Chloroform	97.0	5.0	"	99.2		97.8	65-135			
Tetrahydrofuran	57.6	5.0	"	60.0		96.0	65-135			
1,1,1-Trichloroethane	105	5.0	"	111		94.6	65-135			
1,2-Dichloroethane	80.4	5.0	"	82.4		97.6	65-135			
Benzene	63.1	5.0	"	64.8		97.4	65-135			
Carbon tetrachloride	120	5.0	"	128		93.8	65-135			
Cyclohexane	73.7	5.0	"	70.4		105	65-135			
n-Heptane	85.1	5.0	"	83.6		102	65-135			
Trichloroethene	103	5.0	"	110		93.6	65-135			
1,2-Dichloropropane	90.5	5.0	"	94.4		95.9	65-135			
1,4-Dioxane	70.3	5.0	"	73.6		95.5	65-135			
Bromodichloromethane	126	5.5	"	137		92.0	65-135			
cis-1,3-Dichloropropene	80.5	5.0	"	92.4		87.1	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253801 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
LCS (EE72302-BS1)				Prepared & Analyzed: 22-May-07						
4-Methyl-2-pentanone	82.6	5.0	ug/m³ Air	83.2		99.3	65-135			
trans-1,3-Dichloropropene	79.1	5.0	"	92.4		85.6	65-135			
Toluene	69.4	5.0	"	76.8		90.4	65-135			
1,1,2-Trichloroethane	97.9	5.0	"	111		88.2	65-135			
2-Hexanone	77.6	5.0	"	83.2		93.3	65-135			
Dibromochloromethane	161	5.0	"	174		92.5	65-135			
Tetrachloroethene	115	5.0	"	138		83.3	65-135			
1,2-Dibromoethane (EDB)	128	5.0	"	157		81.5	65-135			
Chlorobenzene	76.5	5.0	"	93.6		81.7	65-135			
Ethylbenzene	71.8	5.0	"	88.4		81.2	65-135			
m,p-Xylene	141	5.0	"	177		79.7	65-135			
Styrene	64.7	5.0	"	86.8		74.5	65-135			
o-Xylene	67.4	5.0	"	88.4		76.2	65-135			
Bromoform	736	20	"	840		87.6	65-135			
1,1,2,2-Tetrachloroethane	83.6	5.0	"	140		59.7	65-135			QL-1L
4-Ethyltoluene	93.9	5.0	"	100		93.9	65-135			
1,3,5-Trimethylbenzene	68.6	5.0	"	100		68.6	65-135			
1,2,4-Trimethylbenzene	65.1	5.0	"	100		65.1	65-135			
1,3-Dichlorobenzene	73.1	10	"	122		59.9	65-135			QL-1L
Benzyl chloride	81.9	5.0	"	105		78.0	65-135			
1,4-Dichlorobenzene	68.6	10	"	122		56.2	65-135			QL-1L
1,2-Dichlorobenzene	61.7	10	"	122		50.6	65-135			QL-1L
1,2,4-Trichlorobenzene	39.6	10	"	151		26.2	65-135			QL-1L
Hexachlorobutadiene	81.2	10	"	218		37.2	65-135			QL-1L
Surrogate: 1,2-Dichloroethane-d4	*106*		*"*	*103*		*103*	*80-120*			
Surrogate: Toluene-d8	*98.2*		*"*	*96.2*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*189*		*"*	*182*		*104*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253801	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Notes and Definitions

QL-1L	The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☑ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/11/2007
H&P Project # BBJ051507-11
Outside Lab:

Client: BB+J
Address: 515 N. State Street, Suite 2200
Chicago, IL 60610
Email: kmcartney@bbjgap.com Phone: 312-644-8556

Collector: Kevin McCartney
Client Project # PN7-0109
Location: Lyons, IL U253901, 0253801
Fax: 312-644-8555

Page: 1 of 1
Project Contact: Kevin McCartney
Turn around time: Normal

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:
Samples renamed per client's instructions. AK 5/24/07

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO2 ☐ O2 ☐ N2				Total # of containers
SG-1	→ SG-16		200	5/11/07	Vapor	400mL									✓				✓					
SG-2	→ SG-17		145												✓				✓					
SG-3	→ SG-18		135												✓				✓					
SG-4	→ CDSG-1		105												✓				✓					
SG-5	→ CDSG-2		120												✓				✓					
SG-6	→ CDSG-3		1245												✓				✓					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	BBJ	[signature] via UPS	H&P	5/15/07	10:30
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☑ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/11/2007
H&P Project # BBJ051507-11
Outside Lab:

Client: BB + J
Address: 515 N. State Street, Suite 2200
Chicago IL 60610
Email: kmcartney@bbjgroup.com Phone: 312-644-8556

Collector: Kevin McCartney
Client Project # PN7-0109
Location: Lyons, IL
Fax: 312-644-8555

Page: 1 of 1
Project Contact: Kevin McCartney
Turn around time: Normal

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:

DO NOT REPORT 1,3 BUTADIENE KM 5/16

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SG-1			200	5/11/07	Vapor	400mL									✓				✓					
SG-2			145												✓				✓					
SG-3			135												✓				✓					
SG-4			105												✓				✓					
SG-5			120												✓				✓					
SG-6			1245												✓				✓					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	BBJ	[signature] via UPS	H&P	5/15/07	10:30
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

May 24, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons, IL
First Environmental File ID: 7-2142
Date Received: May 15, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, IL**

First Environmental File ID: **7-2142**

Date Received: **May 15, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

Method Comments

Lab Number	Sample ID	Comments:
7-2142-002	SB-7 (6.5-7)	*Semi-Volatile Compounds* The reporting limits are elevated due to matrix interference.
7-2142-002	SB-7 (6.5-7)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2142-003	SB-7 (48.5-60)	*Semi-Volatile Compounds* The reporting limits are elevated due to matrix interference.
7-2142-003	SB-7 (48.5-60)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (1-2.5)
Sample No: 7-2142-001

Date Collected: 05/15/07
Time Collected: 9:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	91.51		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (1-2.5)
Sample No: 7-2142-001

Date Collected: 05/15/07
Time Collected: 9:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	464	330	ug/kg	
Benzo(a)pyrene	413	90	ug/kg	
Benzo(b)fluoranthene	411	330	ug/kg	
Benzo(k)fluoranthene	388	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	479	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (1-2.5)
Sample No: 7-2142-001

Date Collected: 05/15/07
Time Collected: 9:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	1,110	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	774	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	895	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (1-2.5)
Sample No: 7-2142-001

Date Collected: 05/15/07
Time Collected: 9:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/18/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/23/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (1-2.5)
Sample No: 7-2142-001

Date Collected: 05/15/07
Time Collected: 9:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		3.2	0.2	mg/kg	
Barium		35.3	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		8.2	0.1	mg/kg	
Lead		3.3	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/17/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		10.5		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (6.5-7)
Sample No: 7-2142-002

Date Collected: 05/15/07
Time Collected: 9:05
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 160.3**			
Analysis Date: 05/18/07				
Total Solids	89.27		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Acetone	< 5,000	100	ug/kg	
Benzene	1,120	5.0	ug/kg	
Bromodichloromethane	< 500	5.0	ug/kg	
Bromoform	< 500	5.0	ug/kg	
Bromomethane	< 500	10.0	ug/kg	
2-Butanone (MEK)	< 500	10.0	ug/kg	
Carbon disulfide	< 500	5.0	ug/kg	
Carbon tetrachloride	< 500	5.0	ug/kg	
Chlorobenzene	< 500	5.0	ug/kg	
Chlorodibromomethane	< 500	5.0	ug/kg	
Chloroethane	< 500	10.0	ug/kg	
Chloroform	< 500	5.0	ug/kg	
Chloromethane	< 500	10.0	ug/kg	
1,1-Dichloroethane	< 500	5.0	ug/kg	
1,2-Dichloroethane	< 500	5.0	ug/kg	
1,1-Dichloroethene	< 500	5.0	ug/kg	
cis-1,2-Dichloroethene	< 500	5.0	ug/kg	
trans-1,2-Dichloroethene	< 500	5.0	ug/kg	
1,2-Dichloropropane	< 500	5.0	ug/kg	
cis-1,3-Dichloropropene	< 500	5.0	ug/kg	
trans-1,3-Dichloropropene	< 500	5.0	ug/kg	
Ethylbenzene	1,520	5.0	ug/kg	
2-Hexanone	< 500	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 500	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 500	10.0	ug/kg	
Methylene chloride	< 500	5.0	ug/kg	
Styrene	< 500	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 500	5.0	ug/kg	
Tetrachloroethene	< 500	5.0	ug/kg	
Toluene	1,890	5.0	ug/kg	
1,1,1-Trichloroethane	< 500	5.0	ug/kg	
1,1,2-Trichloroethane	< 500	5.0	ug/kg	
Trichloroethene	946	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (6.5-7)
Sample No: 7-2142-002

Date Collected: 05/15/07
Time Collected: 9:05
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Vinyl acetate	< 500	10.0	ug/kg	
Vinyl chloride	< 500	10.0	ug/kg	
Xylene, Total	7,520	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	20,600	330	ug/kg	
Acenaphthylene	1,700	330	ug/kg	
Anthracene	30,400	330	ug/kg	
Benzidine	< 3,300	330	ug/kg	
Benzo(a)anthracene	34,600	330	ug/kg	
Benzo(a)pyrene	35,000	90	ug/kg	
Benzo(b)fluoranthene	29,800	330	ug/kg	
Benzo(k)fluoranthene	26,700	330	ug/kg	
Benzo(ghi)perylene	18,400	330	ug/kg	
Benzoic acid	< 3,300	330	ug/kg	
Benzyl alcohol	< 3,300	330	ug/kg	
bis(2-Chloroethoxy)methane	< 3,300	330	ug/kg	
bis(2-Chloroethyl)ether	< 3,300	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 3,300	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 3,300	330	ug/kg	
4-Bromophenyl phenyl ether	< 3,300	330	ug/kg	
Butyl benzyl phthalate	< 3,300	330	ug/kg	
Carbazole	20,800	330	ug/kg	
4-Chloroaniline	< 3,300	330	ug/kg	
4-Chloro-3-methylphenol	< 3,300	330	ug/kg	
2-Chloronaphthalene	< 3,300	330	ug/kg	
2-Chlorophenol	< 3,300	330	ug/kg	
4-Chlorophenyl phenyl ether	< 3,300	330	ug/kg	
Chrysene	31,000	330	ug/kg	
Di-n-butyl phthalate	< 3,300	330	ug/kg	
Di-n-octylphthalate	< 3,300	330	ug/kg	
Dibenzo(a,h)anthracene	7,730	90	ug/kg	
Dibenzofuran	14,400	330	ug/kg	
1,2-Dichlorobenzene	< 3,300	330	ug/kg	
1,3-Dichlorobenzene	< 3,300	330	ug/kg	
1,4-Dichlorobenzene	< 3,300	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (6.5-7)
Sample No: 7-2142-002

Date Collected: 05/15/07
Time Collected: 9:05
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 6,600	660	ug/kg	
2,4-Dichlorophenol	< 3,300	330	ug/kg	
Diethyl phthalate	< 3,300	330	ug/kg	
2,4-Dimethylphenol	< 3,300	330	ug/kg	
Dimethyl phthalate	< 3,300	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 16,000	1600	ug/kg	
2,4-Dinitrophenol	< 16,000	1600	ug/kg	
2,4-Dinitrotoluene	< 2,500	250	ug/kg	
2,6-Dinitrotoluene	< 2,600	260	ug/kg	
Fluoranthene	88,300	330	ug/kg	
Fluorene	22,300	330	ug/kg	
Hexachlorobenzene	< 3,300	330	ug/kg	
Hexachlorobutadiene	< 3,300	330	ug/kg	
Hexachlorocyclopentadiene	< 3,300	330	ug/kg	
Hexachloroethane	< 3,300	330	ug/kg	
Indeno(1,2,3-cd)pyrene	18,900	330	ug/kg	
Isophorone	< 3,300	330	ug/kg	
2-Methylnaphthalene	13,900	330	ug/kg	
2-Methylphenol	< 3,300	330	ug/kg	
3 & 4-Methylphenol	< 3,300	330	ug/kg	
Naphthalene	106,000	330	ug/kg	
2-Nitroaniline	< 16,000	1600	ug/kg	
3-Nitroaniline	< 16,000	1600	ug/kg	
4-Nitroaniline	< 16,000	1600	ug/kg	
Nitrobenzene	< 2,600	260	ug/kg	
2-Nitrophenol	< 16,000	1600	ug/kg	
4-Nitrophenol	< 16,000	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 3,300	330	ug/kg	
n-Nitrosodimethylamine	< 3,300	330	ug/kg	
n-Nitrosodiphenylamine	< 3,300	330	ug/kg	
Pentachlorophenol	< 3,300	330	ug/kg	
Phenanthrene	114,000	330	ug/kg	
Phenol	< 3,300	330	ug/kg	
Pyrene	69,000	330	ug/kg	
Pyridine	< 3,300	330	ug/kg	
1,2,4-Trichlorobenzene	< 3,300	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (6.5-7)
Sample No: 7-2142-002

Date Collected: 05/15/07
Time Collected: 9:05
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 3,300	330	ug/kg	
2,4,6-Trichlorophenol	< 3,300	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (6.5-7)
Sample No: 7-2142-002

Date Collected: 05/15/07
Time Collected: 9:05
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		6.6	0.2	mg/kg	
Barium		40.0	0.1	mg/kg	
Cadmium		0.7	0.1	mg/kg	
Chromium		20.2	0.1	mg/kg	
Lead		32.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/17/07					
Mercury		0.28	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		10.1		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (48.5-60)
Sample No: 7-2142-003

Date Collected: 05/15/07
Time Collected: 9:10
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 160.3**			
Analysis Date: 05/18/07				
Total Solids	86.41		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Acetone	< 5,000	100	ug/kg	
Benzene	< 500	5.0	ug/kg	
Bromodichloromethane	< 500	5.0	ug/kg	
Bromoform	< 500	5.0	ug/kg	
Bromomethane	< 500	10.0	ug/kg	
2-Butanone (MEK)	< 500	10.0	ug/kg	
Carbon disulfide	< 500	5.0	ug/kg	
Carbon tetrachloride	< 500	5.0	ug/kg	
Chlorobenzene	< 500	5.0	ug/kg	
Chlorodibromomethane	< 500	5.0	ug/kg	
Chloroethane	< 500	10.0	ug/kg	
Chloroform	< 500	5.0	ug/kg	
Chloromethane	< 500	10.0	ug/kg	
1,1-Dichloroethane	< 500	5.0	ug/kg	
1,2-Dichloroethane	< 500	5.0	ug/kg	
1,1-Dichloroethene	< 500	5.0	ug/kg	
cis-1,2-Dichloroethene	< 500	5.0	ug/kg	
trans-1,2-Dichloroethene	< 500	5.0	ug/kg	
1,2-Dichloropropane	< 500	5.0	ug/kg	
cis-1,3-Dichloropropene	< 500	5.0	ug/kg	
trans-1,3-Dichloropropene	< 500	5.0	ug/kg	
Ethylbenzene	3,980	5.0	ug/kg	
2-Hexanone	< 500	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 500	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 500	10.0	ug/kg	
Methylene chloride	< 500	5.0	ug/kg	
Styrene	< 500	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 500	5.0	ug/kg	
Tetrachloroethene	< 500	5.0	ug/kg	
Toluene	6,310	5.0	ug/kg	
1,1,1-Trichloroethane	< 500	5.0	ug/kg	
1,1,2-Trichloroethane	< 500	5.0	ug/kg	
Trichloroethene	< 500	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (48.5-60)
Sample No: 7-2142-003

Date Collected: 05/15/07
Time Collected: 9:10
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Vinyl acetate	< 500	10.0	ug/kg	
Vinyl chloride	< 500	10.0	ug/kg	
Xylene, Total	54,500	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	5,240	330	ug/kg	
Acenaphthylene	3,070	330	ug/kg	
Anthracene	5,260	330	ug/kg	
Benzidine	< 3,300	330	ug/kg	
Benzo(a)anthracene	1,250	330	ug/kg	J
Benzo(a)pyrene	774	90	ug/kg	J
Benzo(b)fluoranthene	808	330	ug/kg	J
Benzo(k)fluoranthene	< 3,300	330	ug/kg	
Benzo(ghi)perylene	< 3,300	330	ug/kg	
Benzoic acid	< 3,300	330	ug/kg	
Benzyl alcohol	< 3,300	330	ug/kg	
bis(2-Chloroethoxy)methane	< 3,300	330	ug/kg	
bis(2-Chloroethyl)ether	< 3,300	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 3,300	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 3,300	330	ug/kg	
4-Bromophenyl phenyl ether	< 3,300	330	ug/kg	
Butyl benzyl phthalate	< 3,300	330	ug/kg	
Carbazole	3,250	330	ug/kg	
4-Chloroaniline	< 3,300	330	ug/kg	
4-Chloro-3-methylphenol	< 3,300	330	ug/kg	
2-Chloronaphthalene	< 3,300	330	ug/kg	
2-Chlorophenol	< 3,300	330	ug/kg	
4-Chlorophenyl phenyl ether	< 3,300	330	ug/kg	
Chrysene	1,340	330	ug/kg	J
Di-n-butyl phthalate	< 3,300	330	ug/kg	
Di-n-octylphthalate	< 3,300	330	ug/kg	
Dibenzo(a,h)anthracene	< 3,300	90	ug/kg	
Dibenzofuran	6,860	330	ug/kg	
1,2-Dichlorobenzene	< 3,300	330	ug/kg	
1,3-Dichlorobenzene	< 3,300	330	ug/kg	
1,4-Dichlorobenzene	< 3,300	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (48.5-60)
Sample No: 7-2142-003

Date Collected: 05/15/07
Time Collected: 9:10
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 6,600	660	ug/kg	
2,4-Dichlorophenol	< 3,300	330	ug/kg	
Diethyl phthalate	< 3,300	330	ug/kg	
2,4-Dimethylphenol	7,130	330	ug/kg	
Dimethyl phthalate	< 3,300	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 16,000	1600	ug/kg	
2,4-Dinitrophenol	< 16,000	1600	ug/kg	
2,4-Dinitrotoluene	< 2,500	250	ug/kg	
2,6-Dinitrotoluene	< 2,600	260	ug/kg	
Fluoranthene	4,560	330	ug/kg	
Fluorene	6,670	330	ug/kg	
Hexachlorobenzene	< 3,300	330	ug/kg	
Hexachlorobutadiene	< 3,300	330	ug/kg	
Hexachlorocyclopentadiene	< 3,300	330	ug/kg	
Hexachloroethane	< 3,300	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 3,300	330	ug/kg	
Isophorone	< 3,300	330	ug/kg	
2-Methylnaphthalene	33,800	330	ug/kg	
2-Methylphenol	6,630	330	ug/kg	
3 & 4-Methylphenol	20,400	330	ug/kg	
Naphthalene	403,000	330	ug/kg	
2-Nitroaniline	< 16,000	1600	ug/kg	
3-Nitroaniline	< 16,000	1600	ug/kg	
4-Nitroaniline	< 16,000	1600	ug/kg	
Nitrobenzene	< 2,600	260	ug/kg	
2-Nitrophenol	< 16,000	1600	ug/kg	
4-Nitrophenol	< 16,000	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 3,300	330	ug/kg	
n-Nitrosodimethylamine	< 3,300	330	ug/kg	
n-Nitrosodiphenylamine	< 3,300	330	ug/kg	
Pentachlorophenol	< 3,300	330	ug/kg	
Phenanthrene	14,200	330	ug/kg	
Phenol	7,740	330	ug/kg	
Pyrene	3,100	330	ug/kg	
Pyridine	< 3,300	330	ug/kg	
1,2,4-Trichlorobenzene	< 3,300	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (48.5-60)
Sample No: 7-2142-003

Date Collected: 05/15/07
Time Collected: 9:10
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/18/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 3,300	330	ug/kg	
2,4,6-Trichlorophenol	< 3,300	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/23/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 4.0	2.0	ug/kg	W
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-7 (48.5-60)
Sample No: 7-2142-003

Date Collected: 05/15/07
Time Collected: 9:10
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		6.6	0.2	mg/kg	
Barium		21.6	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		5.6	0.1	mg/kg	
Lead		5.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/21/07					
Mercury		2.66	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		10.1		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (1-2.5)
Sample No: 7-2142-004

Date Collected: 05/15/07
Time Collected: 13:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	77.58		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (1-2.5)
Sample No: 7-2142-004

Date Collected: 05/15/07
Time Collected: 13:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (1-2.5)
Sample No: 7-2142-004

Date Collected: 05/15/07
Time Collected: 13:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	1,290	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (1-2.5)
Sample No: 7-2142-004

Date Collected: 05/15/07
Time Collected: 13:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (1-2.5)
Sample No: 7-2142-004

Date Collected: 05/15/07
Time Collected: 13:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		3.9	0.2	mg/kg	
Barium		25.1	0.1	mg/kg	
Cadmium		0.5	0.1	mg/kg	
Chromium		2.3	0.1	mg/kg	
Lead		11.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		10.0		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (8.5-10)
Sample No: 7-2142-005

Date Collected: 05/15/07
Time Collected: 13:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	90.12		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (8.5-10)
Sample No: 7-2142-005

Date Collected: 05/15/07
Time Collected: 13:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (8.5-10)
Sample No: 7-2142-005

Date Collected: 05/15/07
Time Collected: 13:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	1,460	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (8.5-10)
Sample No: 7-2142-005

Date Collected: 05/15/07
Time Collected: 13:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (8.5-10)
Sample No: 7-2142-005

Date Collected: 05/15/07
Time Collected: 13:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		6.0	0.2	mg/kg	
Barium		11.0	0.1	mg/kg	
Cadmium		0.4	0.1	mg/kg	
Chromium		5.8	0.1	mg/kg	
Lead		5.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		9.30		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (13.5-15)
Sample No: 7-2142-006

Date Collected: 05/15/07
Time Collected: 14:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	92.34		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (13.5-15)
Sample No: 7-2142-006

Date Collected: 05/15/07
Time Collected: 14:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/18/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (13.5-15)
Sample No: 7-2142-006

Date Collected: 05/15/07
Time Collected: 14:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/18/07		**Preparation Method 3540C** Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (13.5-15)
Sample No: 7-2142-006

Date Collected: 05/15/07
Time Collected: 14:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/18/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/23/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 4.0	2.0	ug/kg	W
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-12 (13.5-15)
Sample No: 7-2142-006

Date Collected: 05/15/07
Time Collected: 14:00
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		3.9	0.2	mg/kg	
Barium		3.2	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		1.9	0.1	mg/kg	
Lead		2.4	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		0.09	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		9.30		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (1-2.5)
Sample No: 7-2142-007

Date Collected: 05/15/07
Time Collected: 14:15
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Solids, Total	**Method: 160.3**				
Analysis Date: 05/18/07					
Total Solids		88.85		%	
Volatile Organic Compounds	**Method: 5035A/8260B**				
Analysis Date: 05/21/07					
Acetone		< 100	100	ug/kg	
Benzene		< 5.0	5.0	ug/kg	
Bromodichloromethane		< 5.0	5.0	ug/kg	
Bromoform		< 5.0	5.0	ug/kg	
Bromomethane		< 10.0	10.0	ug/kg	
2-Butanone (MEK)		< 10.0	10.0	ug/kg	
Carbon disulfide		< 5.0	5.0	ug/kg	
Carbon tetrachloride		< 5.0	5.0	ug/kg	
Chlorobenzene		< 5.0	5.0	ug/kg	
Chlorodibromomethane		< 5.0	5.0	ug/kg	
Chloroethane		< 10.0	10.0	ug/kg	
Chloroform		< 5.0	5.0	ug/kg	
Chloromethane		< 10.0	10.0	ug/kg	
1,1-Dichloroethane		< 5.0	5.0	ug/kg	
1,2-Dichloroethane		< 5.0	5.0	ug/kg	
1,1-Dichloroethene		< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene		10.7	5.0	ug/kg	
trans-1,2-Dichloroethene		< 5.0	5.0	ug/kg	
1,2-Dichloropropane		< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene		< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene		< 5.0	5.0	ug/kg	
Ethylbenzene		< 5.0	5.0	ug/kg	
2-Hexanone		< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)		< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)		< 10.0	10.0	ug/kg	
Methylene chloride		< 5.0	5.0	ug/kg	
Styrene		< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane		< 5.0	5.0	ug/kg	
Tetrachloroethene		< 5.0	5.0	ug/kg	
Toluene		< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane		< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane		< 5.0	5.0	ug/kg	
Trichloroethene		< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (1-2.5)
Sample No: 7-2142-007

Date Collected: 05/15/07
Time Collected: 14:15
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	302	90	ug/kg	
Benzo(b)fluoranthene	339	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	340	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (1-2.5)
Sample No: 7-2142-007

Date Collected: 05/15/07
Time Collected: 14:15
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	658	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	430	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	643	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (1-2.5)
Sample No: 7-2142-007

Date Collected: 05/15/07
Time Collected: 14:15
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 4.0	2.0	ug/kg	W
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	17.8	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		7.1	0.2	mg/kg	
Barium		40.0	0.1	mg/kg	
Cadmium		0.8	0.1	mg/kg	
Chromium		12.9	0.1	mg/kg	
Lead		138	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		8.92		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (3.5-5)
Sample No: 7-2142-008

Date Collected: 05/15/07
Time Collected: 14:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	93.27		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (3.5-5)
Sample No: 7-2142-008

Date Collected: 05/15/07
Time Collected: 14:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	26.9	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
Acenaphthene	381	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	1,530	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	2,270	330	ug/kg	
Benzo(a)pyrene	2,390	90	ug/kg	
Benzo(b)fluoranthene	2,030	330	ug/kg	
Benzo(k)fluoranthene	2,570	330	ug/kg	
Benzo(ghi)perylene	1,170	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	476	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	2,580	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	500	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (3.5-5)
Sample No: 7-2142-008

Date Collected: 05/15/07
Time Collected: 14:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	3,420	330	ug/kg	
Fluorene	404	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	1,200	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	546	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	2,870	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	3,210	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Sample ID: SB-3 (3.5-5)
Sample No: 7-2142-008

Date Collected: 05/15/07
Time Collected: 14:30
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 4.0	2.0	ug/kg	W
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	23.3	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	29.8	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
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Sample ID: SB-3 (3.5-5)
Sample No: 7-2142-008

Date Collected: 05/15/07
Time Collected: 14:30
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Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		5.9	0.2	mg/kg	
Barium		49.4	0.1	mg/kg	
Cadmium		1.0	0.1	mg/kg	
Chromium		21.6	0.1	mg/kg	
Lead		86.5	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		0.12	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		8.14		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (13.5-15)
Sample No: 7-2142-009

Date Collected: 05/15/07
Time Collected: 14:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/18/07				
Total Solids	88.28		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	8.2	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (13.5-15)
Sample No: 7-2142-009

Date Collected: 05/15/07
Time Collected: 14:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/21/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	5.6	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/15/07
Project ID:	Lyons, IL	**Time Collected:**	14:45
Sample ID:	SB-3 (13.5-15)	**Date Received:**	05/15/07
Sample No:	7-2142-009	**Date Reported:**	05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/17/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (13.5-15)
Sample No: 7-2142-009

Date Collected: 05/15/07
Time Collected: 14:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/20/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/17/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/23/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-3 (13.5-15)
Sample No: 7-2142-009

Date Collected: 05/15/07
Time Collected: 14:45
Date Received: 05/15/07
Date Reported: 05/24/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/20/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/17/07		
Arsenic		31.0	0.2	mg/kg	
Barium		44.6	0.1	mg/kg	
Cadmium		1.0	0.1	mg/kg	
Chromium		12.0	0.1	mg/kg	
Lead		22.0	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/18/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/17/07					
pH @ 25°C, 1:10		8.32		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/15/07
Project ID:	Lyons, IL	**Time Collected:**	0:00
Sample ID:	Trip Blank	**Date Received:**	05/15/07
Sample No:	7-2142-010	**Date Reported:**	05/24/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/21/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

Page____ of ____ pgs

First Environmental Laboratories, Inc.

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IEPA Certification# 100292

Company Name: Bradburne, Briller, + Johnson, LLC
Street Address: 515 N. State St. Suite 2200
City: Chicago State: IL Zip: 60610
Phone: 312-644-8556 Fax: 312-644-8555 e-mail: kmccartney@bbjgroup.com
Send Report To: Via: Fax ☐ e-mail ☑
Sampled By: Kerin McCartney

Project I.D.: Lyons, IL
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOCs (8260B)	SVOCs (8270C)	PCB (8082)	RCRA Metals (6010B/7470A/7471A)	Herbicides (8151)	Organochlorine Pest. (8081A)	pH (9040B/9045C)	Comments	Lab I.D.
5/15 9am	SB-7 (1-2.5)	S	✓	✓	✓	✓	✓	✓	✓		7-2142-001
5/15 9:05am	SB-7 (6.5-7)	S	✓	✓	✓	✓	✓	✓	✓		002
5/15 9:10am	SB-7 (48.5-60)	S	✓	✓	✓	✓	✓	✓	✓		003
5/15 1:30pm	SB-12 (1-2.5) SB-10 12	S	✓	✓	✓	✓	✓	✓	✓		004
5/15 1:45pm	SB-12 (8.5-10)	S	✓	✓	✓	✓	✓	✓	✓		005
5/15 2pm	SB-12 (13.5-15)	S	✓	✓	✓	✓	✓	✓	✓		006
5/15 2:15pm	SB-3 (1-2.5)	S	✓	✓	✓	✓	✓	✓	✓		007
5/15 2:30pm	SB-3 (3.5-5)	S	✓	✓	✓	✓	✓	✓	✓		008
5/15 2:45pm	SB-3 (13.5-15)	S	✓	✓	✓	✓	✓	✓	✓		009
	trip blank		✓								010

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No.__ _____ºC
Received within 6 hrs of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☑ Yes ☐ No

Notes and Special Instructions:

Relinquished By: [signature] Date/Time 5/15/07 3:00 Received By: [signature] Date/Time 5/15/07 3:00
Relinquished By: Date/Time Received By: Date/Time

Rev. 4/06

First Environmental Laboratories, Inc.

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May 31, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons, IL
First Environmental File ID: 7-2204
Date Received: May 18, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, IL**

First Environmental File ID: **7-2204**

Date Received: **May 18, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

Method Comments

Lab Number	Sample ID	Comments:
7-2204-001	SB-10 (6.5-7)	*Volatile Organic Compounds* Surrogate recovery outside control limits; high bias due to matrix interference.
7-2204-002	SB-10 (8.5-10)	*Volatile Organic Compounds* Surrogate recovery outside control limits; high bias due to matrix interference.
7-2204-004	SB-5 vicinity	*Semi-Volatile Compounds* The reporting limits are elevated due to matrix interference.
7-2204-004	SB-5 vicinity	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2204-005	SB-5 (3.5-5)	*Semi-Volatile Compounds* The reporting limits are elevated due to matrix interference.
7-2204-005	SB-5 (3.5-5)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, IL**

First Environmental File ID: **7-2204**

Date Received: **May 18, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

7-2204-009 SB-9 (6-7.5) *Volatile Organic Compounds*
The reporting limits are elevated due to matrix interference.

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (6.5-7)
Sample No: 7-2204-001

Date Collected: 05/17/07
Time Collected: 15:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	64.42		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	15:45
Sample ID:	SB-10 (6.5-7)	**Date Received:**	05/18/07
Sample No:	7-2204-001	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	15:45
Sample ID:	SB-10 (6.5-7)	**Date Received:**	05/18/07
Sample No:	7-2204-001	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (6.5-7)
Sample No: 7-2204-001

Date Collected: 05/17/07
Time Collected: 15:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	10.0		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	15:45
Sample ID:	SB-10 (6.5-7)	**Date Received:**	05/18/07
Sample No:	7-2204-001	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		2.6	0.2	mg/kg	
Barium		27.2	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		4.3	0.1	mg/kg	
Lead		6.1	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (8.5-10)
Sample No: 7-2204-002

Date Collected: 05/17/07
Time Collected: 15:55
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	82.12		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	8.8	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (8.5-10)
Sample No: 7-2204-002

Date Collected: 05/17/07
Time Collected: 15:55
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/23/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	6.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (8.5-10)
Sample No: 7-2204-002

Date Collected: 05/17/07
Time Collected: 15:55
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (8.5-10)
Sample No: 7-2204-002

Date Collected: 05/17/07
Time Collected: 15:55
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/22/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	8.97		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (8.5-10)
Sample No: 7-2204-002

Date Collected: 05/17/07
Time Collected: 15:55
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		4.9	0.2	mg/kg	
Barium		55.3	0.1	mg/kg	
Cadmium		0.4	0.1	mg/kg	
Chromium		16.9	0.1	mg/kg	
Lead		10.8	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	16:00
Sample ID:	SB-10 (18.5-20)	**Date Received:**	05/18/07
Sample No:	7-2204-003	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	81.01		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/24/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (18.5-20)
Sample No: 7-2204-003

Date Collected: 05/17/07
Time Collected: 16:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/24/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (18.5-20)
Sample No: 7-2204-003

Date Collected: 05/17/07
Time Collected: 16:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (18.5-20)
Sample No: 7-2204-003

Date Collected: 05/17/07
Time Collected: 16:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/23/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	9.35		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-10 (18.5-20)
Sample No: 7-2204-003

Date Collected: 05/17/07
Time Collected: 16:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		1.5	0.2	mg/kg	
Barium		3.7	0.1	mg/kg	
Cadmium		< 0.1	0.1	mg/kg	
Chromium		3.3	0.1	mg/kg	
Lead		1.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 vicinity
Sample No: 7-2204-004

Date Collected: 05/17/07
Time Collected: 16:05
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	93.76		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 vicinity
Sample No: 7-2204-004

Date Collected: 05/17/07
Time Collected: 16:05
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
Acenaphthene	< 1,650	330	ug/kg	
Acenaphthylene	< 1,650	330	ug/kg	
Anthracene	2,800	330	ug/kg	
Benzidine	< 1,650	330	ug/kg	
Benzo(a)anthracene	4,090	330	ug/kg	
Benzo(a)pyrene	3,720	90	ug/kg	
Benzo(b)fluoranthene	5,050	330	ug/kg	
Benzo(k)fluoranthene	3,020	330	ug/kg	
Benzo(ghi)perylene	< 1,650	330	ug/kg	
Benzoic acid	< 1,650	330	ug/kg	
Benzyl alcohol	< 1,650	330	ug/kg	
bis(2-Chloroethoxy)methane	< 1,650	330	ug/kg	
bis(2-Chloroethyl)ether	< 1,650	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 1,650	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 1,650	330	ug/kg	
4-Bromophenyl phenyl ether	< 1,650	330	ug/kg	
Butyl benzyl phthalate	< 1,650	330	ug/kg	
Carbazole	< 1,650	330	ug/kg	
4-Chloroaniline	< 1,650	330	ug/kg	
4-Chloro-3-methylphenol	< 1,650	330	ug/kg	
2-Chloronaphthalene	< 1,650	330	ug/kg	
2-Chlorophenol	< 1,650	330	ug/kg	
4-Chlorophenyl phenyl ether	< 1,650	330	ug/kg	
Chrysene	3,860	330	ug/kg	
Di-n-butyl phthalate	< 1,650	330	ug/kg	
Di-n-octylphthalate	< 1,650	330	ug/kg	
Dibenzo(a,h)anthracene	583	90	ug/kg	
Dibenzofuran	< 1,650	330	ug/kg	
1,2-Dichlorobenzene	< 1,650	330	ug/kg	
1,3-Dichlorobenzene	< 1,650	330	ug/kg	
1,4-Dichlorobenzene	< 1,650	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 vicinity
Sample No: 7-2204-004

Date Collected: 05/17/07
Time Collected: 16:05
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/24/07		**Preparation Method 3540C** Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 3,300	660	ug/kg	
2,4-Dichlorophenol	< 1,650	330	ug/kg	
Diethyl phthalate	< 1,650	330	ug/kg	
2,4-Dimethylphenol	< 1,650	330	ug/kg	
Dimethyl phthalate	< 1,650	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 8,000	1600	ug/kg	
2,4-Dinitrophenol	< 8,000	1600	ug/kg	
2,4-Dinitrotoluene	< 1,250	250	ug/kg	
2,6-Dinitrotoluene	< 1,300	260	ug/kg	
Fluoranthene	8,590	330	ug/kg	
Fluorene	1,980	330	ug/kg	
Hexachlorobenzene	< 1,650	330	ug/kg	
Hexachlorobutadiene	< 1,650	330	ug/kg	
Hexachlorocyclopentadiene	< 1,650	330	ug/kg	
Hexachloroethane	< 1,650	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 1,650	330	ug/kg	
Isophorone	< 1,650	330	ug/kg	
2-Methylnaphthalene	< 1,650	330	ug/kg	
2-Methylphenol	< 1,650	330	ug/kg	
3 & 4-Methylphenol	< 1,650	330	ug/kg	
Naphthalene	< 1,650	330	ug/kg	
2-Nitroaniline	< 8,000	1600	ug/kg	
3-Nitroaniline	< 8,000	1600	ug/kg	
4-Nitroaniline	< 8,000	1600	ug/kg	
Nitrobenzene	< 1,300	260	ug/kg	
2-Nitrophenol	< 8,000	1600	ug/kg	
4-Nitrophenol	< 8,000	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 1,650	330	ug/kg	
n-Nitrosodimethylamine	< 1,650	330	ug/kg	
n-Nitrosodiphenylamine	< 1,650	330	ug/kg	
Pentachlorophenol	< 1,650	330	ug/kg	
Phenanthrene	8,640	330	ug/kg	
Phenol	< 1,650	330	ug/kg	
Pyrene	6,840	330	ug/kg	
Pyridine	< 1,650	330	ug/kg	
1,2,4-Trichlorobenzene	< 1,650	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 vicinity
Sample No: 7-2204-004

Date Collected: 05/17/07
Time Collected: 16:05
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 1,650	330	ug/kg	
2,4,6-Trichlorophenol	< 1,650	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	9.36		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 vicinity
Sample No: 7-2204-004

Date Collected: 05/17/07
Time Collected: 16:05
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		5.0	0.2	mg/kg	
Barium		32.5	0.1	mg/kg	
Cadmium		0.4	0.1	mg/kg	
Chromium		7.9	0.1	mg/kg	
Lead		19.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (3.5-5)
Sample No: 7-2204-005

Date Collected: 05/17/07
Time Collected: 16:10
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	89.55		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (3.5-5)
Sample No: 7-2204-005

Date Collected: 05/17/07
Time Collected: 16:10
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/23/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/25/07		Preparation Date: 05/21/07		
Acenaphthene	< 2,640	330	ug/kg	
Acenaphthylene	< 2,640	330	ug/kg	
Anthracene	< 2,640	330	ug/kg	
Benzidine	< 2,640	330	ug/kg	
Benzo(a)anthracene	< 2,640	330	ug/kg	
Benzo(a)pyrene	2,050	90	ug/kg	
Benzo(b)fluoranthene	< 2,640	330	ug/kg	
Benzo(k)fluoranthene	< 2,640	330	ug/kg	
Benzo(ghi)perylene	< 2,640	330	ug/kg	
Benzoic acid	< 2,640	330	ug/kg	
Benzyl alcohol	< 2,640	330	ug/kg	
bis(2-Chloroethoxy)methane	< 2,640	330	ug/kg	
bis(2-Chloroethyl)ether	< 2,640	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 2,640	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 2,640	330	ug/kg	
4-Bromophenyl phenyl ether	< 2,640	330	ug/kg	
Butyl benzyl phthalate	< 2,640	330	ug/kg	
Carbazole	< 2,640	330	ug/kg	
4-Chloroaniline	< 2,640	330	ug/kg	
4-Chloro-3-methylphenol	< 2,640	330	ug/kg	
2-Chloronaphthalene	< 2,640	330	ug/kg	
2-Chlorophenol	< 2,640	330	ug/kg	
4-Chlorophenyl phenyl ether	< 2,640	330	ug/kg	
Chrysene	< 2,640	330	ug/kg	
Di-n-butyl phthalate	< 2,640	330	ug/kg	
Di-n-octylphthalate	< 2,640	330	ug/kg	
Dibenzo(a,h)anthracene	< 2,640	90	ug/kg	
Dibenzofuran	< 2,640	330	ug/kg	
1,2-Dichlorobenzene	< 2,640	330	ug/kg	
1,3-Dichlorobenzene	< 2,640	330	ug/kg	
1,4-Dichlorobenzene	< 2,640	330	ug/kg	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	16:10
Sample ID:	SB-5 (3.5-5)	**Date Received:**	05/18/07
Sample No:	7-2204-005	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/25/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 5,280	660	ug/kg	
2,4-Dichlorophenol	< 2,640	330	ug/kg	
Diethyl phthalate	< 2,640	330	ug/kg	
2,4-Dimethylphenol	< 2,640	330	ug/kg	
Dimethyl phthalate	< 2,640	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 12,800	1600	ug/kg	
2,4-Dinitrophenol	< 12,800	1600	ug/kg	
2,4-Dinitrotoluene	< 2,000	250	ug/kg	
2,6-Dinitrotoluene	< 2,080	260	ug/kg	
Fluoranthene	3,690	330	ug/kg	
Fluorene	< 2,640	330	ug/kg	
Hexachlorobenzene	< 2,640	330	ug/kg	
Hexachlorobutadiene	< 2,640	330	ug/kg	
Hexachlorocyclopentadiene	< 2,640	330	ug/kg	
Hexachloroethane	< 2,640	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 2,640	330	ug/kg	
Isophorone	< 2,640	330	ug/kg	
2-Methylnaphthalene	< 2,640	330	ug/kg	
2-Methylphenol	< 2,640	330	ug/kg	
3 & 4-Methylphenol	< 2,640	330	ug/kg	
Naphthalene	4,710	330	ug/kg	
2-Nitroaniline	< 12,800	1600	ug/kg	
3-Nitroaniline	< 12,800	1600	ug/kg	
4-Nitroaniline	< 12,800	1600	ug/kg	
Nitrobenzene	< 2,080	260	ug/kg	
2-Nitrophenol	< 12,800	1600	ug/kg	
4-Nitrophenol	< 12,800	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 2,640	330	ug/kg	
n-Nitrosodimethylamine	< 2,640	330	ug/kg	
n-Nitrosodiphenylamine	< 2,640	330	ug/kg	
Pentachlorophenol	< 2,640	330	ug/kg	
Phenanthrene	< 2,640	330	ug/kg	
Phenol	< 2,640	330	ug/kg	
Pyrene	3,490	330	ug/kg	
Pyridine	< 2,640	330	ug/kg	
1,2,4-Trichlorobenzene	< 2,640	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (3.5-5)
Sample No: 7-2204-005

Date Collected: 05/17/07
Time Collected: 16:10
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/25/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 2,640	330	ug/kg	
2,4,6-Trichlorophenol	< 2,640	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	9.61		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (3.5-5)
Sample No: 7-2204-005

Date Collected: 05/17/07
Time Collected: 16:10
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		1.8	0.2	mg/kg	
Barium		15.2	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		7.1	0.1	mg/kg	
Lead		22.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	16:15
Sample ID:	SB-5 (6-7.5)	**Date Received:**	05/18/07
Sample No:	7-2204-006	**Date Reported:**	05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	85.63		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (6-7.5)
Sample No: 7-2204-006

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (6-7.5)
Sample No: 7-2204-006

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (6-7.5)
Sample No: 7-2204-006

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	8.66		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-5 (6-7.5)
Sample No: 7-2204-006

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		7.7	0.2	mg/kg	
Barium		51.4	0.1	mg/kg	
Cadmium		0.6	0.1	mg/kg	
Chromium		9.5	0.1	mg/kg	
Lead		21.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		0.06	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: Rinsate
Sample No: 7-2204-007

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	16:15
Sample ID:	Rinsate	**Date Received:**	05/18/07
Sample No:	7-2204-007	**Date Reported:**	05/31/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/24/07		Preparation Date: 05/23/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 10	10	ug/L	
Benzidine	< 10	10	ug/L	
Benzo(a)anthracene	< 10	10	ug/L	
Benzo(a)pyrene	< 10	10	ug/L	
Benzo(b)fluoranthene	< 10	10	ug/L	
Benzo(k)fluoranthene	< 10	10	ug/L	
Benzo(ghi)perylene	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Chrysene	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Dibenzo(a,h)anthracene	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
3,3'-Dichlorobenzidine	< 20	20	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: Rinsate
Sample No: 7-2204-007

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/24/07		**Preparation Method 3510C** Preparation Date: 05/23/07		
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Fluoranthene	< 10	10	ug/L	
Fluorene	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Indeno(1,2,3-cd)pyrene	< 10	10	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	
3 & 4-Methylphenol	< 10	10	ug/L	
Naphthalene	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenanthrene	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
Pyrene	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: Rinsate
Sample No: 7-2204-007

Date Collected: 05/17/07
Time Collected: 16:15
Date Received: 05/18/07
Date Reported: 05/31/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 05/25/07		Preparation Date: 05/21/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
pH @ 25°C	**Method: 4500H+,B**			
Analysis Date: 05/18/07 15:30				
pH @ 25°C	7.68		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	16:15
Sample ID:	Rinsate	**Date Received:**	05/18/07
Sample No:	7-2204-007	**Date Reported:**	05/31/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/24/07			Preparation Date: 05/21/07		
Arsenic		< 0.002	0.002	mg/L	
Barium		0.002	0.001	mg/L	
Cadmium		< 0.001	0.001	mg/L	
Chromium		< 0.001	0.001	mg/L	
Lead		< 0.002	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.0005	0.0005	mg/L	
Herbicides Method 8321A	**Method: 8321A**				
Analysis Date: 05/23/07					
2,4-D		< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)		< 0.10	0.1	ug/L	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (1-2.5)
Sample No: 7-2204-008

Date Collected: 05/17/07
Time Collected: 16:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	95		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (1-2.5)
Sample No: 7-2204-008

Date Collected: 05/17/07
Time Collected: 16:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	372	330	ug/kg	
Benzo(a)pyrene	403	90	ug/kg	
Benzo(b)fluoranthene	451	330	ug/kg	
Benzo(k)fluoranthene	366	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	403	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (1-2.5)
Sample No: 7-2204-008

Date Collected: 05/17/07
Time Collected: 16:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	902	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	570	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	728	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (1-2.5)
Sample No: 7-2204-008

Date Collected: 05/17/07
Time Collected: 16:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/24/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/31/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/21/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10 Analysis Date: 05/22/07	**Method: 4500H+B**			
pH @ 25°C, 1:10	9.53		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (1-2.5)
Sample No: 7-2204-008

Date Collected: 05/17/07
Time Collected: 16:45
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07		Preparation Date: 05/18/07		
Arsenic	2.4	0.2	mg/kg	
Barium	14.6	0.1	mg/kg	
Cadmium	0.2	0.1	mg/kg	
Chromium	5.2	0.1	mg/kg	
Lead	10.1	0.2	mg/kg	
Selenium	< 0.2	0.2	mg/kg	
Silver	< 0.1	0.1	mg/kg	
Total Metals **Method: 7470A**				
Analysis Date: 05/23/07				
Mercury	< 0.05	0.05	mg/kg	
Herbicides **Method: 8321**				
Analysis Date: 05/22/07				
2,4-Dichlorophenoxyacetic acid (2,4-D)	< 100	100	ug/kg	S
Silvex (2,4,5-TP)	< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (6-7.5)
Sample No: 7-2204-009

Date Collected: 05/17/07
Time Collected: 16:50
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	96.52		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (6-7.5)
Sample No: 7-2204-009

Date Collected: 05/17/07
Time Collected: 16:50
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/23/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C**				
Analysis Date: 05/24/07 Preparation Date: 05/21/07				
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (6-7.5)
Sample No: 7-2204-009

Date Collected: 05/17/07
Time Collected: 16:50
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	467	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (6-7.5)
Sample No: 7-2204-009

Date Collected: 05/17/07
Time Collected: 16:50
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/22/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	9.88		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (6-7.5)
Sample No: 7-2204-009

Date Collected: 05/17/07
Time Collected: 16:50
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07		Preparation Date: 05/18/07		
Arsenic	0.9	0.2	mg/kg	
Barium	3.1	0.1	mg/kg	
Cadmium	< 0.1	0.1	mg/kg	
Chromium	2.3	0.1	mg/kg	
Lead	< 0.2	0.2	mg/kg	
Selenium	< 0.2	0.2	mg/kg	
Silver	< 0.1	0.1	mg/kg	
Total Metals **Method: 7470A**				
Analysis Date: 05/23/07				
Mercury	< 0.05	0.05	mg/kg	
Herbicides **Method: 8321**				
Analysis Date: 05/22/07				
2,4-Dichlorophenoxyacetic acid (2,4-D)	< 100	100	ug/kg	S
Silvex (2,4,5-TP)	< 100	100	ug/kg	S

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (18.5-20)
Sample No: 7-2204-010

Date Collected: 05/17/07
Time Collected: 17:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 160.3**				
Analysis Date: 05/21/07				
Total Solids	92.8		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/24/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (18.5-20)
Sample No: 7-2204-010

Date Collected: 05/17/07
Time Collected: 17:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/24/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (18.5-20)
Sample No: 7-2204-010

Date Collected: 05/17/07
Time Collected: 17:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	756	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (18.5-20)
Sample No: 7-2204-010

Date Collected: 05/17/07
Time Collected: 17:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/31/07		Preparation Date: 05/22/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**			
Analysis Date: 05/22/07				
pH @ 25°C, 1:10	9.74		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: SB-9 (18.5-20)
Sample No: 7-2204-010

Date Collected: 05/17/07
Time Collected: 17:00
Date Received: 05/18/07
Date Reported: 05/31/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/24/07			Preparation Date: 05/18/07		
Arsenic		4.4	0.2	mg/kg	
Barium		6.5	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		3.3	0.1	mg/kg	
Lead		2.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.05	0.05	mg/kg	
Herbicides	**Method: 8321**				
Analysis Date: 05/22/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/17/07
Project ID:	Lyons, IL	**Time Collected:**	
Sample ID:	Trip Blank	**Date Received:**	05/18/07
Sample No:	7-2204-011	**Date Reported:**	05/31/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

Page 1 of 1 pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
24 Hr. Pager (708) 569-7507
E-mail: info@firstenv.com
IEPA Certification# 100292

Company Name: BB+J
Street Address: 515 N. State Street
City: Chicago State: IL Zip: 60610
Phone: 312-644-8556 Fax: 312-644-8555 e-mail: kmccartney@bbjgrup.com
Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☑
Sampled By: Michele Hargreaves + Karen Beaman

Project I.D.: Lyons, IL
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOC (8260B)	SVOC (8270C)	PCB (8082)	RCRA Mets (6010B 7470A/7471A)	Herbicides (8151)	Org. Cl. Pest. (8081A)	pH (9040B/9045C)		Comments	Lab I.D.
5/17 3:45	SB-12 (6.5-7) 10 (SS1)	S	✓	✓	✓	✓	✓	✓	✓		7-2204-	001
3:55	SB-12 (8.5-10) 10 (SS2)	S	✓	✓	✓	✓	✓	✓	✓			002
4:00	SB-12 (18.5-20) 10 (SS2)	S	✓	✓	✓	✓	✓	✓	✓			003
4:05	SB-5 vicinity	S	✓	✓	✓	✓	✓	✓	✓			004
4:10	SB-5 (3.5-5)	S	✓	✓	✓	✓	✓	✓	✓			005
4:15	SB-5 (6-7.5)	S	✓	✓	✓	✓	✓	✓	✓			006
4:30	Rinsate	W	✓	✓	✓	✓	✓	✓	✓			007
4:45	SB-9 (1-2.5)	S	✓	✓	✓	✓	✓	✓	✓			008
4:50	SB-9 (6-7.5)	S	✓	✓	✓	✓	✓	✓	✓			009
5:00	SB-9 (18.5-20)	S	✓	✓	✓	✓	✓	✓	✓			010
	trip blank		✓									011

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No.__ <6 ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☑ Yes ☐ No

Notes and Special Instructions:

Relinquished By: Michele Hargreaves Date/Time 5/18/07 8:20am Received By: M [signature] Date/Time 5/18/07 8:20
Relinquished By: Date/Time Received By: Date/Time

Rev. 4/06

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June 04, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons, IL (Monitoring Wells)
First Environmental File ID: 7-2232
Date Received: May 18, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, IL (Monitoring Wells)**

First Environmental File ID: **7-2232**

Date Received: **May 18, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	12:30
Sample ID:	MW-9	**Date Received:**	05/18/07
Sample No:	7-2232-001	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	12:30
Sample ID:	MW-9	**Date Received:**	05/18/07
Sample No:	7-2232-001	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	12:30
Sample ID:	MW-9	**Date Received:**	05/18/07
Sample No:	7-2232-001	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3510C**				
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C**				
Analysis Date: 05/25/07		Preparation Date: 05/24/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	12:30
Sample ID:	MW-9	**Date Received:**	05/18/07
Sample No:	7-2232-001	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 05/25/07		Preparation Date: 05/24/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**			
Analysis Date: 05/25/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**			
Analysis Date: 05/23/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	12:30
Sample ID:	MW-9	**Date Received:**	05/18/07
Sample No:	7-2232-001	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/22/07			Preparation Date: 05/21/07		
Arsenic		< 0.002	0.002	mg/L	
Barium		0.101	0.001	mg/L	
Cadmium		< 0.001	0.001	mg/L	
Chromium		0.002	0.001	mg/L	
Lead		< 0.002	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
pH @ 25°C	**Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00					
pH @ 25°C		7.56		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:00
Sample ID:	MW-12	**Date Received:**	05/18/07
Sample No:	7-2232-002	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:00
Sample ID:	MW-12	**Date Received:**	05/18/07
Sample No:	7-2232-002	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

First Environmental Laboratories, Inc.
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1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:00
Sample ID:	MW-12	**Date Received:**	05/18/07
Sample No:	7-2232-002	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3510C**				
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C**				
Analysis Date: 05/26/07		Preparation Date: 05/24/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	11	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:00
Sample ID:	MW-12	**Date Received:**	05/18/07
Sample No:	7-2232-002	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 05/25/07		Preparation Date: 05/24/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**			
Analysis Date: 05/25/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**			
Analysis Date: 05/23/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:00
Sample ID:	MW-12	**Date Received:**	05/18/07
Sample No:	7-2232-002	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/22/07			Preparation Date: 05/21/07		
Arsenic		< 0.002	0.002	mg/L	
Barium		0.095	0.001	mg/L	
Cadmium		< 0.001	0.001	mg/L	
Chromium		0.010	0.001	mg/L	
Lead		0.024	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
pH @ 25°C	**Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00					
pH @ 25°C		7.52		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:30
Sample ID:	MW-10	**Date Received:**	05/18/07
Sample No:	7-2232-003	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:30
Sample ID:	MW-10	**Date Received:**	05/18/07
Sample No:	7-2232-003	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:30
Sample ID:	MW-10	**Date Received:**	05/18/07
Sample No:	7-2232-003	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/26/07		Preparation Date: 05/24/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:30
Sample ID:	MW-10	**Date Received:**	05/18/07
Sample No:	7-2232-003	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 05/25/07		Preparation Date: 05/24/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**			
Analysis Date: 05/25/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**			
Analysis Date: 05/23/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	13:30
Sample ID:	MW-10	**Date Received:**	05/18/07
Sample No:	7-2232-003	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/22/07			Preparation Date: 05/21/07		
Arsenic		< 0.002	0.002	mg/L	
Barium		0.097	0.001	mg/L	
Cadmium		< 0.001	0.001	mg/L	
Chromium		0.005	0.001	mg/L	
Lead		0.009	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
pH @ 25°C	**Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00					
pH @ 25°C		7.48		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:00
Sample ID:	MW-5	**Date Received:**	05/18/07
Sample No:	7-2232-004	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:00
Sample ID:	MW-5	**Date Received:**	05/18/07
Sample No:	7-2232-004	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.0005	0.0005	mg/L	
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/24/07			Preparation Date: 05/21/07		
Arsenic		0.010	0.002	mg/L	
Barium		0.239	0.001	mg/L	
Cadmium		0.006	0.001	mg/L	
Chromium		0.006	0.001	mg/L	
Lead		< 0.002	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
pH @ 25°C	**Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00					
pH @ 25°C		7.50		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	0:00
Sample ID:	Trip Blank	**Date Received:**	05/18/07
Sample No:	7-2232-005	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:15
Sample ID:	Quarry Well	**Date Received:**	05/18/07
Sample No:	7-2232-006	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:15
Sample ID:	Quarry Well	**Date Received:**	05/18/07
Sample No:	7-2232-006	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:15
Sample ID:	Quarry Well	**Date Received:**	05/18/07
Sample No:	7-2232-006	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/26/07		Preparation Date: 05/24/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:15
Sample ID:	Quarry Well	**Date Received:**	05/18/07
Sample No:	7-2232-006	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 05/25/07		Preparation Date: 05/24/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**			
Analysis Date: 05/25/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**			
Analysis Date: 05/23/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:15
Sample ID:	Quarry Well	**Date Received:**	05/18/07
Sample No:	7-2232-006	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/24/07			Preparation Date: 05/21/07		
Arsenic		< 0.002	0.002	mg/L	
Barium		0.043	0.001	mg/L	
Cadmium		< 0.001	0.001	mg/L	
Chromium		< 0.001	0.001	mg/L	
Lead		< 0.002	0.002	mg/L	
Selenium		< 0.002	0.002	mg/L	
Silver		< 0.001	0.001	mg/L	
pH @ 25°C	**Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00					
pH @ 25°C		7.40		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:30
Sample ID:	Quarry Discharge	**Date Received:**	05/18/07
Sample No:	7-2232-007	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/23/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:30
Sample ID:	Quarry Discharge	**Date Received:**	05/18/07
Sample No:	7-2232-007	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:30
Sample ID:	Quarry Discharge	**Date Received:**	05/18/07
Sample No:	7-2232-007	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/27/07		Preparation Date: 05/24/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/26/07		Preparation Date: 05/24/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:30
Sample ID:	Quarry Discharge	**Date Received:**	05/18/07
Sample No:	7-2232-007	**Date Reported:**	06/04/07

Analyte		Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**		**Preparation Method 3510C**		
Analysis Date: 05/25/07			Preparation Date: 05/24/07		
Aldrin		< 0.05	0.05	ug/L	
Aroclor 1016		< 0.50	0.50	ug/L	
Aroclor 1221		< 0.50	0.50	ug/L	
Aroclor 1232		< 0.50	0.50	ug/L	
Aroclor 1242		< 0.50	0.50	ug/L	
Aroclor 1248		< 0.50	0.50	ug/L	
Aroclor 1254		< 0.50	0.50	ug/L	
Aroclor 1260		< 0.50	0.50	ug/L	
alpha-BHC		< 0.05	0.05	ug/L	
beta-BHC		< 0.05	0.05	ug/L	
delta-BHC		< 0.05	0.05	ug/L	
gamma-BHC (Lindane)		< 0.05	0.05	ug/L	
alpha-Chlordane		< 0.50	0.50	ug/L	
gamma-Chlordane		< 0.50	0.50	ug/L	
4,4'-DDD		< 0.10	0.10	ug/L	
4,4'-DDE		< 0.10	0.10	ug/L	
4,4'-DDT		< 0.10	0.10	ug/L	
Dieldrin		< 0.10	0.10	ug/L	
Endosulfan I		< 0.05	0.05	ug/L	
Endosulfan II		< 0.10	0.10	ug/L	
Endosulfan sulfate		< 0.10	0.10	ug/L	
Endrin		< 0.10	0.10	ug/L	
Endrin aldehyde		< 0.10	0.10	ug/L	
Endrin ketone		< 0.10	0.10	ug/L	
Heptachlor		< 0.05	0.05	ug/L	
Heptachlor epoxide		< 0.05	0.05	ug/L	
Methoxychlor		< 0.50	0.50	ug/L	
Toxaphene		< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**				
Analysis Date: 05/25/07					
2,4-D		< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)		< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**				
Analysis Date: 05/23/07					
Mercury		< 0.0005	0.0005	mg/L	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/18/07
Project ID:	Lyons, IL (Monitoring Wells)	**Time Collected:**	14:30
Sample ID:	Quarry Discharge	**Date Received:**	05/18/07
Sample No:	7-2232-007	**Date Reported:**	06/04/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/24/07		Preparation Date: 05/21/07		
Arsenic	< 0.002	0.002	mg/L	
Barium	0.043	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	< 0.001	0.001	mg/L	
Lead	< 0.002	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	< 0.001	0.001	mg/L	
pH @ 25°C **Method: 4500H+,B**				
Analysis Date: 05/21/07 13:00				
pH @ 25°C	8.20		Units	

CHAIN OF CUSTODY RECORD

Page 1 of 1 pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
24 Hr. Pager (708) 569-7507
E-mail: info@firstenv.com
IEPA Certification# 100292

Company Name: Bradburne, Briller + Johnson
Street Address: 515 N. State Street Suite 2200
City: Chicago State: IL Zip: 60610
Phone: 312-644-8554 Fax: 312-644-8555 e-mail: kmccartney@bbjgroup.com
Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☑
Sampled By: Mike Caureur + Karen Beaman

Project I.D.: Lyons, IL (Monitoring wells)
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOCs (8260B)	SVOCs (8270C)	PCBs (8082)	PCBs/PAHs (8310/8270)	Herbs (8151)	Org. Cl. Pest. (8081A)	pH (9040B/9040C)		Comments	Lab I.D.
12:30	MW-9	W	✓	✓	✓	✓	✓	✓	✓			7-2232-001
1:00	MW-12	W	✓	✓	✓	✓	✓	✓	✓			002
1:30	MW-10	W	✓	✓	✓	✓	✓	✓	✓			003
2:00	MW-~~0~~5 (MJ4)	W	✓	✓	✓	✓	✓	✓	✓		INSUFFICIENT VOLUME	004
	trip blank		✓									005
2:15	Quarry Well	W	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~		hold RUN PER KMC	006
2:30	Quarry Discharge	W	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~		hold 5/21/07 (KC)	007

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ☒ No.__ 4 ºC
Received within 6 hrs. of collection: ____
Ice Present: Yes ☒ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:____ºC

Containers Received Preserved: ☐ Yes ☐ No

Notes and Special Instructions: Please hold the "Quarry Well" and "Quarry Discharge" samples till further notice

Relinquished By: Karen Beaman Date/Time 5/18/07 5:15 Received By: [signature] Date/Time 5/18/07 5:15
Relinquished By: ____ Date/Time ____ Received By: ____ Date/Time ____

Rev. 4/06

APPENDIX D

VILLAGE OF LYONS ORDINANCE 5-18-99-3

Municipality: Lyons

County: Cook

LPC Number: 31715020

OC: 00012803

CERTIFICATION

STATE OF ILLINOIS)
COUNTY OF COOK)
VILLAGE OF LYONS)

I, WILLIAM J. POLICH, VILLAGE CLERK of the Village of Lyons DO HEREBY CERTIFY that the foregoing:

ORDINANCE NO. 5-18-99-3

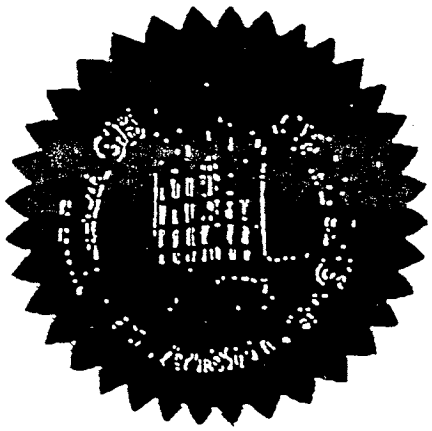
is a true and correct copy of AN ORDINANCE now on file in my office, which said ORDINANCE was approved and passed by the President and Board of Trustees of the Village of Lyons, Illinois aforesaid, on the 18TH day of MAY, 1999.

I DO HEREBY FURTHER CERTIFY that the original of which the foregoing is a true and correct copy, is entrusted to my care and safekeeping.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Corporate Seal of the Village of Lyons aforesaid, at the Village of Lyons, in the County of Cook and the State of Illinois, this 26TH day of MAY, 1999.

William J. Polich

William J, Polich
Village Clerk, C.M.C.
Lyons, Illinois



RELEASABLE
DEC 1 1 2003
REVIEWER MM

VILLAGE OF LYONS

ORDINANCE NO. 5-18-99-3

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS WELLS FOR POTABLE
WATER SUPPLY

ADOPTED BY THE PRESIDENT
AND BOARD OF TRUSTEES
OF THE
VILLAGE OF LYONS

THIS 18TH DAY OF MAY, 1999

Published in pamphlet form by the
authority of the President and
Board of Trustees of the Village
of Lyons, Cook County, Illinois
this 18th day of May, 1999

ORDINANCE NO. 5-18-99-5

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS THE USE OF GROUNDWATER SUPPLY BY THE INSTALLATION
OR USE OF POTABLE WATER WELLS OR ANY OTHER

WHEREAS, certain properties in the Village of Lyons, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class 1 groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 residential remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the Village of Lyons desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of Properties that are the source of said chemical constituents;

NOW, THEREFORE BE IT ORDAINED BY THE VILLAGE BOARD OF THE CIIY VILLAGE OF LYONS:

Section One. Article 7, Chapter 4, Section 2 of the ordinances of the Village of Lyons is repealed and replaced in its entirety by the following:

7-4-2. **Use of groundwater as a potable water supply is prohibited.**
The use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation or drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons.

A. **Penalties.**
Any person violating the Provisions of this ordinance shall be subject to a fine of up to $750.00 for each violation.

B. **Definitions.**
Person is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.
Potable water is any water used for human or domestic consumption including but not limited to, water used for drinking, bathing, swimming, washing dishes or preparing foods.

Memorandum of Understanding. The President of the Village of Lyons is hereby authorized and directed to enter into a Memorandum of Understanding with the Illinois Environmental Protection Agency (Illinois EPA) in which the Village assumes responsibility for tracking remediated sites, notifying the Illinois EPA of changes to this ordinance and taking certain precautions when siting public potable water supply wells.

Section Two: Severability. If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Three: Effective Date. This ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law.

PASSED THIS 18th DAY OF MAY, 1999

AYES: 5

NAYS: 0

ABSENT: One (Trustee TVRDIK)

APPROVED THIS 18th DAY
OF MAY, 1999

David A. Visk
Village President

ATTEST:

William J. Polich, C.M.C.
Village Clerk

APPENDIX I

BB&J PHASE II ESA: FUTURE USE

June 13, 2007

Village of Lyons c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Subject: **Report of Phase II Environmental Site Assessment**
Future Use Evaluation
Southwest Corner of Ogden and Lawndale Avenues
Lyons, Illinois
BB&J Project No. 0253901

Dear Mr. Bush:

Bradburne, Briller & Johnson, LLC (BB&J) is pleased to submit to the Village of Lyons this *Report of Phase II Environmental Site Assessment* for the parcel of land located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property). This project was performed in accordance with the scope of work outlined in BB&J Proposal No. PN7-0117.

We appreciate the opportunity to provide you with our environmental consulting services. If you have any questions or require additional information, please call.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

Karen Beaman
Staff Scientist

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P.G.
Principal

515 N. State Street, Suite 2200, Chicago, Illinois
Voice 312.644.8556 Fax 312.644.8555
www.bbjgroup.com

REPORT OF
PHASE II ENVIRONMENTAL SITE ASSESSMENT AND
LIMITED SURFACE FLUX ASSESSMENT

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Submitted to:

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
Chicago, Illinois

Prepared by:

BRADBURNE, BRILLER & JOHNSON, LLC
Chicago, Illinois

June 13, 2007

TABLE OF CONTENTS

1.0 BACKGROUND 1

2.0 OBJECTIVE 1

3.0 SUBSURFACE ASSESSMENT 1
- 3.1 Pre-Mobilization Activities 1
- 3.2 Subsurface Soil Investigation 2
- 3.3 Soil Gas Survey 3
- 3.4 Flux Chamber Survey 4

4.0 FINDINGS AND ANALYTICAL RESULTS 5
- 4.1 Subsurface Geology and Hydrogeology 5
- 4.2 Field Screening Results 5
- 4.3 Laboratory Analytical Results 6
  - 4.3.1 Soil Results 6
  - 4.3.2 Soil Gas Results 8
  - 4.3.3 Flux Chamber Results 8
  - 4.3.4 QA/QC 9

5.0 CONCLUSIONS AND RECOMMENDATIONS 9
- 5.1 Subsurface Soil Investigation 9
- 5.2 Soil Vapor Intrusion Modeling 10
  - 5.2.1 Johnson and Ettinger Calculations 10
  - 5.2.2 Proposed Building on South Portion of Subject Property 12
  - 5.2.3 Soil Gas Conclusions 12
  - 5.2.4 Soil Gas Recommendations 13
- 5.3 Soil Flux Survey 14

TABLES

Table 1: Summary of Soil Laboratory Analytical Results
Table 2: Summary of Soil Gas Laboratory Analytical Results
Table 3: Summary of Flux Chamber Laboratory Analytical Results

TABLE OF CONTENTS (continued)

FIGURES

Figure 1: Site Location Map
Figure 2: Site Plan Showing Sample Locations

APPENDICES

Appendix A: Field Procedures
Appendix B: Soil Boring Logs
Appendix C: Laboratory Analytical Reports

1.0 BACKGROUND

BB&J performed an Additional Limited Phase II Environmental Site Assessment (Phase II ESA) for the fill operation property located on the southwest corner of Ogden and Lawndale Avenues in Lyons, Illinois (Subject Property). During a previous soil gas investigation, BB&J identified locations where elevated concentrations of methane and various volatile organic compounds (VOCs) were identified, including (but not limited to) vinyl chloride, trichloroethylene, and gasoline-related constituents. As a result of those findings, additional samples were collected to evaluate possible future uses of the property and to assist in developing recommendations to allow for the redevelopment and future use of this area.

2.0 OBJECTIVE

The objective of this project was to help evaluate management and construction considerations to address environmental conditions related to the redevelopment of the Subject Property for future use.

3.0 SUBSURFACE ASSESSMENT

The scope of work for this project included the collection of soil matrix, soil vapor, and soil flux. The soil matrix data was used to evaluate ingestion and inhalation exposure pathways as provided for in Illinois Environmental Protection Agency's (IEPA) Tiered Approach to Corrective Action (TACO) under an outdoor recreational use (residential) scenario. Soil gas was collected to help establish generalized subsurface conditions beneath the Subject Property and to evaluate possible vapor intrusion concerns under a commercial use scenario. Soil flux sampling was conducted to help evaluate concentrations of constituents of concern (COCs) and associated risks under an outdoor recreational use (residential) scenario. The following sections present a summary of the three facets of the investigation conducted for the Subject Property.

3.1 Pre-Mobilization Activities

Prior to initiating field activities, BB&J prepared a Health and Safety Plan (HSP) for use by BB&J's on-site representative to address suspected site-specific COCs, potential site and work-related hazards, and additional health and safety issues. In addition, and on behalf of BB&J, Terra Trace Environmental Services (Terra Trace) contacted the approved Illinois utility locating companies to clear the underground utilities on May 7, 2007 (over 72 hours prior to field work).

3.2 Subsurface Soil Investigation

On May 11, 2007, BB&J provided oversight for the advancement of three soil probes utilizing direct-push technology (i.e., Geoprobe) by Terra Trace. See Figure 2 for a site plan showing the soil probe locations. The three soil probes (GP-1, GP-2, and GP-3) were advanced on the southern property boundary of the Subject Property.

Soil samples were collected continuously until the termination depth of each soil probe at 12 feet below ground surface (bgs). BB&J collected the soil samples, performed visual classification of soil type(s), field screened the samples using a photoionization detector (PID), and submitted select soil samples for laboratory chemical analyses.

Based on field screening results, one worst case[1] soil sample was submitted from each soil probe to First Environmental Laboratories, Inc. of Naperville, Illinois (First Environmental) for chemical analyses. The following samples were submitted:

- GP-1 from 0-2 feet bgs;
- GP-2 from 4-6 feet bgs; and,
- GP-3 from 4-6 feet bgs.

The soil samples collected from GP-1, GP-2, and GP-3 were analyzed for the following:

- VOC by United States Environmental Protection Agency (USEPA) Method 8260B;
- Semivolatile organic compounds (SVOC) by USEPA Method 8270C;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082;
- Resource Conservation and Recovery Act (RCRA) metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8081A; and,
- pH by USEPA Method 9040B/9045C..

[1] A "worst case" soil sample was submitted based on: 1) the soil sample that exhibited the highest PID screening results; and/or, 2) appeared to exhibit the most prominent staining; and/or, 3) exhibited the strongest potential chemical odor (or, in the absence of an apparent chemical odor, the strongest anomalous odor, as noted).

During the May 11, 2007 Subsurface Soil Investigation, no ground-water was encountered; therefore, no ground-water samples could be collected from any of the soil probe locations.

An equipment rinsate sample also was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, Herbicides, organochlorine pesticides, and pH. The laboratory supplied the trip blank sample for quality assurance/quality control (QA/QC) purposes. The trip blank sample was analyzed for VOCs.

Details of the aforementioned subsurface assessment activities are presented within the Field Procedures (Appendix A).

3.3 Soil Gas Survey

On May 11, 2007, BB&J installed three soil gas probes, SG-16, SG-17, and SG-18[2], in GP-1, GP-2, and GP-3, respectively. The three soil gas probes were located on the southern portion of the Subject Property.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Advisory – Active Soil Vapor Investigation* Section 2.2.5 A 1 and 2, created by the California Environmental Protection Agency (EPA) Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board – Los Angeles Region (LARWQCB), dated January 28, 2003[3].

Each soil probe used in the Soil Investigation (GP-1, GP-2, and GP-3) was backfilled with bentonite from the termination depth of 12 feet bgs to approximately six feet bgs. A soil gas probe tip and associated tubing was then inserted into the probe hole. Approximately one foot of sand was poured into the soil probe hole on top of the probe tip to a depth of five feet bgs to minimize the disruption of airflow to the probe tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

---

[2] The soil gas probes were identified as SG-16, SG-17, and SG-18 to continue the numbering of soil gas samples collected during previous soil gas investigations at the Subject Property. 15 soil gas samples had previously been collected.

[3] This document was prepared by the California EPA DTSC and LARWQCB to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the California EPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

The soil gas samples were collected using 400-milliliter (mL) Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60-mL plastic syringe with a three-way valve. Approximately 4 mLs per foot, or a total of 40-mL (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch swagelok fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

3.4 Flux Chamber Survey

Beginning on May 21, 2007, BB&J conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property and provide data a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property. A total of 13 soil flux chambers were utilized to collect soil gas throughout the surface of the Subject Property and in the recreational area on the east adjoining property. BB&J placed six flux chambers (SF-5, SF-6, SF-10, SF-11, SF-12, and SF-13) on the ground surface during the afternoon of May 21, 2007 and packed soil around the flux chamber edges to create an air-tight environment inside the flux chambers. BB&J returned the morning of May 22, 2007 to collect the accumulated gas samples. On May 24, 2007 BB&J placed seven additional soil flux chambers (SF-1, SF-2, SF-3, SF-4, SF-5, SF-7, and SF-8) on the ground surface using the same method to ensure an air-tight environment. BB&J returned on May 25, 2007 to collect the additional soil flux samples. In addition, soil flux chamber SF-9 was placed on the ground on the afternoon of May 25, 2007 and was collected in the morning of May 26, 2007 using the same sampling methodologies described above. For locations of the soil flux sample locations, refer to Figure 2.

As part of the sampling procedures for the flux chambers, an "initial" soil flux sample of the ambient air within the flux chamber was collected for each soil flux location by connecting the 400-mL Summa canister to the soil flux chamber once the flux chamber was placed on the ground and an air-tight

environment had been created. The purpose of the "initial" soil flux samples was to evaluate whether any VOCs present at the surface of the ground were collected inside the flux chamber at the time the flux chamber was placed on the ground surface. Any subsequent soil flux samples that contained high concentrations of VOCs would then be compared to the "initial" soil flux sample to determine whether the high concentrations of VOCs were from soil gas collected at the time the flux chamber was placed on the ground surface[4].

The flux chambers were then left overnight to collect gas from the subsurface and equilibrate[5]. The following morning, BB&J returned to the Subject Property to collect the incubated flux chamber samples using 400-mL Summa canisters. The soil flux samples were identified by the sample location and the time they were collected. BB&J personnel shipped the Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

4.0 FINDINGS AND ANALYTICAL RESULTS

The following sections present the subsurface assessment findings and a summary of the laboratory analytical results.

4.1 Subsurface Geology and Hydrogeology

Based on visual classification of the subsurface soil encountered during the assessment, the primary subsurface soil type consisted of orange, tan, and yellow clayey fill with some sand. Copies of the field soil probe logs are presented in Appendix B. No ground water was encountered during the subsurface soil sampling activities.

4.2 Field Screening Results

[4] Soil flux samples SF-3 t=0 and SF-9 t=0 were analyzed as the concentrations in the soil flux sample contained high concentrations of VOCs. Results of these samples can be found in section 5.3.
[5] The soil flux chambers were situated on the ground and exposed to soil vapors for at least 8 hours.

Based on the field screening results of soil samples, organic vapor readings ranged from 0.0 parts per million (ppm)[6] to 2.3 ppm. Field screening results are presented on the field probe logs contained in Appendix B.

4.3 Laboratory Analytical Results

It is BB&J's understanding that the Subject Property may be redeveloped for commercial purposes or as an outdoor recreational area; therefore, soil laboratory analytical data (Appendix C) was compared to the established criteria in the IEPA TACO residential, industrial/commercial, and construction worker Remediation Objectives (ROs) to evaluate the potential risk posed by detected COCs.

In addition, as it is BB&J's understanding that the Subject Property is being considered for commercial development, BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[7] to compare the results of the soil gas survey to potential vapor intrusion pathways into the proposed commercial building on the south portion of the Subject Property. In using the J&E calculator, BB&J utilized commercial exposure factors assuming that portions of the Subject Property may be developed for commercial use[8]. Based on conversations with parties with the Client, BB&J presumes that structures that could be considered "residential" will not be constructed at the Subject Property.

A summary of the soil analytical results collected from the south portion of the Subject Property is found in Table 1. A summary of the soil gas analytical results for samples collected from the south portion of the Subject Property are compared to J&E calculated Estimated Risk-based Soil Vapor Standards for a commercial scenario in Table 2. Additionally, a summary of the analytical results and risk assessment calculations for the soil flux samples collected throughout the Subject Property can be found in Table 3.

4.3.1 Soil Results

[6] Organic vapor readings are based on a calibration of the mini-RAE PID to 100 ppm isobutylene. All background readings were 0.0 ppm.
[7] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[8] When using the J&E calculator to determine the concentrations of soil vapor entering the proposed commercial development, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response *Risk Assessment Guidance For Superfund Volume I: Human Health Evaluation Manual* (RAGS Volume I), dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

BB&J compared the soil laboratory analytical results for VOCs, SVOCs, PCBs, RCRA metals, herbicides, and organochlorine pesticides to the IEPA TACO ROs for residential, industrial/commercial, and construction worker exposure pathways [Tables A and B of 35 IAC Section 742 Appendix B], and the Class I [Table C of 35 IAC Section 742 Appendix B] and Class II [Table D of 35 IAC Section 742 Appendix B] ground-water migration. A summary of the soil laboratory analytical results is presented in Table 1.

VOCs, PCBs, Herbicides, and Organochlorine Pesticides

Of the three soil samples analyzed, no VOCs, PCBs, herbicides, or organochlorine pesticides were detected above the laboratory reporting limits (RLs).

SVOCs

Of the three soil samples analyzed for SVOCs, multiple SVOCs were reported to be present in the soil sample collected from GP-1 above laboratory RLs. No SVOCs were identified above laboratory RLs for soil samples collected from GP-2 or GP-3. Sixteen different SVOCs were identified in the sample collected from GP-1; however, of these, only the following five exceeded TACO ROs and/or the Soil Component of the Ground-water Ingestion route for Class I or Class II ground-water[9]:

- benzo(a)anthracene [2.63 milligrams per kilograms (mg/kg)] exceeded the TACO RO for the residential ingestion exposure pathway and the Soil Component of the Ground-water Ingestion route for Class I ground-water;
- benzo(a)pyrene, 2.72 mg/kg, exceeded the TACO RO for the residential and industrial/commercial ingestion exposure pathways;
- benzo(b)fluoranthene, 3.33 mg/kg, exceeded the TACO RO for the residential ingestion exposure pathway;
- Carbazole, 0.84 mg/kg, exceeded the Soil Component of the Ground-water Ingestion route for Class I ground-water; and,
- Ideno(1,2,3-cd)pyrene, 1.38 mg/kg, exceeded the TACO RO for the residential ingestion exposure pathway.

RCRA Metals

[9] As indicated in Title 35 IAC 742, Appendix B, Table B.

Multiple RCRA metals were detected in the soil samples from GP-1, GP-2, and GP-3 above laboratory RLs, including:

- Arsenic;
- Barium;
- Cadmium;
- Chromium;
- Lead; and,
- Mercury.

Of the RCRA metals detected above laboratory RLs, only mercury, detected in the soil sample collected from GP-1 at a concentration of 0.11 mg/kg, exceeded the applicable RO for the construction worker inhalation exposure pathway.

4.3.2 Soil Gas Results

Soil gas samples (SG-16, SG-17, and SG-18) were collected from soil probes GP-1, GP-2, and GP-3, and analyzed for VOCs and methane. Numerous VOCs were detected above laboratory RLs in the soil gas samples by USEPA TO-15 analysis, including:

- Acetone
- Benzene
- 2-Butanone (MEK)
- Carbon disulfide
- Cyclohexane
- 1,2-Dichloroethane
- cis-1,2-Dichloroethene
- Ethylbenzene
- n-Heptane
- n-Hexane
- 2-Hexanone
- 4-Methyl-2-pentanone
- Propene
- Tetrachloroethene (PCE)
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene (TCE)
- Trimethylbenzene
- Vinyl chloride
- m,p-Xylene
- o-Xylene

In addition, methane was detected above laboratory RLs in each of the three soil gas samples using a modified version of USEPA Method 8015B. Specific locations and concentrations of each of these are presented in Table 2. Further discussion of these results is provided in Section 5.2.

4.3.3 Flux Chamber Results

BB&J used 12 flux chamber devices (SF-1 through SF-12) to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property. In addition, one flux chamber device (SF-13) was placed in a park to the east of the Subject Property, across Lawndale Avenue, to obtain background concentrations of VOCs. VOCs were detected in the soil flux samples located throughout the Subject Property using USEPA TO-15 analysis, including:

- Acetone
- Benzene
- 2- Butanone (MEK)
- Carbon disulfide
- Chloromethane
- cis-1,2-Dichloroethene
- trans-1,2-Dichloroethene
- Ethyl acetate
- n-Heptane
- n-Hexane
- Naphthalene
- Propene
- PCE
- TCE
- 1,2,4-Trimethylbenzene
- Toluene
- m,p-Xylene
- Vinyl chloride

Of the 18 VOCs detected in the soil flux samples only carbon disulfide was present in SF-13, the flux chamber which was located in the park across Lawndale Avenue.

In addition, methane was not detected above laboratory RLs in any of the soil flux samples at the Subject Property using a modified version of USEPA Method 8015B. Specific locations and concentrations of each of these are presented in Table 3. Further discussion of these results is provided in Section 5.3.

4.3.4 QA/QC

An equipment rinsate sample was collected from the Geoprobe liner during the Soil Investigation. No VOCs, SVOCs, herbicides, or organochlorine pesticides were reported in the equipment rinsate sample; however, barium at a concentration of 0.002 mg/L was detected. In addition, no VOCs were reported above the laboratory RLs in the trip blank.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following sections present BB&J's conclusion and recommendations based on subsurface assessment findings at the Subject Property.

5.1 Subsurface Soil Investigation

During the Phase II ESA, BB&J collected three soil samples from GP-1, GP-2 and GP-3. The soil samples were submitted to First Environmental and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochloride pesticides, and pH.

Multiple SVOCs were detected in the soil sample collected from GP-1 above laboratory RLs. However, only the following five exceeded TACO ROs and/or the Soil Component of the Ground-water Ingestion route for Class I or Class II ground-water:

- benzo(a)anthracene 2.63 mg/kg exceeded the TACO RO for the residential ingestion exposure pathway and the Soil Component of the Ground-water Ingestion route for Class I ground-water;
- benzo(a)pyrene, 2.72 mg/kg, exceeded the TACO RO for the residential and industrial/commercial ingestion exposure pathways;
- benzo(b)fluoranthene, 3.33 mg/kg, exceeded the TACO RO for the residential ingestion exposure pathway;
- Carbazole, 0.84 mg/kg, exceeded the Soil Component of the Ground-water Ingestion route for Class I ground-water; and,
- Indeno(1,2,3-cd)pyrene, 1.38 mg/kg, exceeded the TACO RO for the residential ingestion exposure pathway.

In addition, multiple RCRA metals were detected in the soil samples collected from GP-1, GP-2 and GP-3 above laboratory RLs. However, of the RCRA metals detected above laboratory RLs, only mercury, detected in the soil sample collected from GP-1 at a concentration of 0.11 mg/kg exceeded the applicable TACO RO for the construction worker inhalation exposure pathway.

5.2 Soil Vapor Intrusion Modeling

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in buried wastes and/or impacted ground water can emit vapors that may migrate through subsurface soil and into air spaces of overlying buildings.

5.2.1 Johnson and Ettinger Calculations

BB&J utilized USEPA's on-line J&E calculator[10] to evaluate the vapor intrusion pathway into potential commercial structures. This J&E calculator replicates the implementation that the USEPA Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (OSWER Vapor Intrusion Guidance) used in developing its Vapor Intrusion Guidance but includes a number of enhancements that are facilitated by web implementation. The J&E calculator has become increasingly popular with regulators and consultants over the last 10 years and several manuscripts have been published on its use. It should be noted that the State of Illinois does not provide any guidance or soil gas standards with regard to vapor intrusion.

Briefly, the calculator is a one-dimensional analytical solution, which incorporates both advection and diffusion transport mechanisms to produce a unitless "attenuation factor." This attenuation factor is a measure of how soil and building properties limit the intrusion of organic vapors into overlying buildings and is defined as the concentration of the compound in indoor air divided by the concentration of the compound in soil gas or ground water.

Although the J&E calculator is inherently conservative, BB&J also made the following conservative assumptions in running the calculator:

- The highest soil vapor concentration of a given constituent identified site-wide was assumed to be the concentration present site-wide (even if lower concentrations were identified elsewhere) for the proposed commercial building vapor intrusion scenario on the south portion of the Subject Property (i.e., as presented in Table 2);
- OSWER Vapor Intrusion Guidance[11] allows a site risk manager to select media-specific target concentrations for screening at three cancer risk levels: 10^{-4}, 10^{-5}, and 10^{-6}; however, BB&J compared the modeled results to the most conservative of these (10^{-6});
- A less protective, best estimate and more protective target concentration were computed for the maximum soil gas concentration of a given constituent detected at the Subject Property. These computed "backward" target concentrations served as comparison to the detected soil gas concentrations at the Subject Property. The best estimate concentrations are based on the best guesses of depth to the contamination source and residual moisture content for the chosen soil type. The less protective and more protective range of values is computed based on user-specified uncertainty in both depth to the contamination source and unsaturated zone moisture content; and,
- The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed building on the south portion of the Subject Property, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be

[10] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[11] http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf

found in the USEPA Office of Emergency and Remedial Response RAGS Volume I, dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample (see Section 4.2).

5.2.2 Proposed Building on South Portion of Subject Property

As indicated in Table 2, VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected in the soil gas samples. Of the VOCs detected in gas samples SG-16, SG-17, SG-18, only vinyl chloride was estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Vapor Standards[12].

Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, i.e., Superfund) risk assessment, modeled cancer risks under the most protective scenario slightly exceeded the 10^{-6} bench mark used for risk assessment purposes. Plainly stated, the modeled results indicate a slightly greater than approximately one in a million chance per employee developing cancer directly attributable to vapor intrusion into buildings due to on-site sources. This risk is driven primarily by the presence of vinyl chloride which is a known carcinogen.

In addition to the VOCs detected at the proposed building on the south portion of the Subject Property, as indicated in Table 2, methane was detected in each soil gas sample from the three soil probe locations. However, none of the three soil gas samples contained concentrations within the explosive range for methane.

5.2.3 Soil Gas Conclusions

As indicated above, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected from the

south portion of the Subject Property. Based on modeled results using default exposure factors for commercial scenarios, a cancer risk exceeded the benchmark 10^{-6} (i.e., one in a million) cancer risk. This elevated risk is driven primarily by the presence of vinyl chloride.

In addition to the chronic hazard potentially present at the Subject Property, concentrations of methane were reported to be present in all three soil gas samples; however, none of the samples collected contained concentrations of methane within the explosive range for methane.

5.2.4 Soil Gas Recommendations

As indicated in Table 2, vinyl chloride was detected above the modeled "more-protective" Target Concentration for Estimated Risk-based Soil Gas Standards. In particular, vinyl chloride was detected at a concentration greater than twice the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards. Such a concentration suggests that these constituents have the potential to accumulate within the proposed building on the south portion of the Subject Property that would pose a human health risk. However, it should be noted that (1) the Johnson-Ettinger model is inherently conservative and (2) new soil is continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings.

Possible remedies to limit the exposure of this constituent to the proposed building on the south portion of the Subject Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting subsurface would require maintenance and upkeep for the lifetime of the buildings. In addition, the venting system would require air permits from IEPA to discharge VOCs into the ambient air.

Although methane was not detected within its explosive range in the three soil gas samples, the presence of methane should be noted and explored further. To ensure that methane would not accumulate beneath or within the proposed building on the south portion of the Subject Property, proper venting of this structure would potentially be required to reduce the potential for explosions to occur. The presence of methane in the gas samples may indicate that material inconsistent with IEPA's definition of clean construction and demolition debris may be present beneath the surface of the Subject Property. As the

[12] These J&E calculations used commercial/industrial default exposure factors due to the intended commercial use of the proposed community center.

material decomposes, shifting of the subsurface may occur, causing structural damage to overlying structures, including the proposed building on the south portion of the Subject Property.

The specific sources of the VOCs and methane could not be determined by the scope of this investigation. However, BB&J understands that a gasoline station was formerly located on the northeast portion of the Subject Property near the intersection of Ogden Avenue and Lawndale Avenue. A leaking underground storage tank (LUST) incident was reported for the gasoline station and a No Further Remediation (NFR) letter was issued for the LUST incident. Despite the issuance of the NFR, the gasoline station may still be the source of the gasoline-related compounds, partly or wholly. Sources of the chlorinated solvents and non-chlorinated solvents have not been identified.

The modeling conducted by BB&J should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model include, but are not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

Overall, if plans for future use of the Subject Property include the construction of buildings on the southern portion, BB&J would recommend additional soil gas investigation in the footprint of any future building to confirm whether or not there are any COCs for the specific location. If the presence of COCs is not investigated further, then BB&J suggests that a subsurface vapor barrier beneath the proposed buildings at the Subject Property, combined with engineered venting systems be installed.

5.3 Soil Flux Survey

BB&J used 13 flux chamber devices (SF-1 through SF-13) to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property in an outdoor recreational (i.e.

residential) scenario. Specifically, the flux chamber devices can be used to model cancer risks against a bench mark. Details of the methods used in this calculation can be found in *How to Collect Reliable Soil Gas Data for Upward Risk Assessments, Part 2, Surface Flux Chamber Method* [Hartman, 2003].

The basic approach of the flux chamber method was to use an enclosure or chamber to isolate a surface from the ambient air and collect compounds emanating from the subsurface. Compounds either build-up over time in the static chamber headspace or, in the dynamic chamber method, clean sweep air is added to the chamber at a controlled rate. The effluent air from the chamber is collected using canisters and analyzed for chemicals of concern.

The emission rate of chemicals, ER_i (milligrams per minute per square meter) is calculated as:
For Static Chambers:

$$ER_i = \frac{C_c \times V_c}{A \times T}$$

It is BB&J's understanding that preliminary redevelopment plans for the Subject Property include paved and unpaved recreational areas, such as baseball fields, soccer fields, basketball courts, and tennis courts. As such, an equivalent outdoor field area can be computed from the measured chamber concentration based upon the fact that the flux into the chamber is the same as the flux into that area (since flux is per unit area). The equation is:

$$\mathbf{C_f = ER_i * A_f / Q}$$

Where:

- C_c is the static chamber concentration after the incubation period (µg/m^3);
- C_f is the area of the field concentration (µg/m^3);
- V_c is the volume of the static chamber (m^3);
- T is the incubation time of the static or dynamic chamber (minute);
- A is the contact area of the static or dynamic chamber to surface soil (m^2);
- A_f is the field area (m^2);
- Q, where **Q = W*H*Ws**, is the volumetric flow rate in the outdoor field area (m^3 /min);
- W is the width field area perpendicular to the wind (m);

- H is the height of the field area perpendicular to the wind (m); and
- Ws is the wind speed (m/second).

Using these parameters and the laboratory analytical data collected from the soil flux canisters, BB&J calculated C_f for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property. Further details of the calculations are in Table 3. The following key assumptions were used to complete these calculations for a recreational use scenario:

- The incubation time (T) for each soil flux sample was the time the soil flux canister was initially placed on the ground to the time the soil flux sample was collected. Every soil flux sample had an incubation time of at least 8 hours;
- The area of the of the field (A_f) is 100 m^2;
- The width of the field (W) is 10 m;
- The height (H) of a person using the field is 1.5 m (approximately 4.9 feet); and,
- The wind speed (W) is 1 m/sec [approximately 2.25 miles per hour (mph)].

Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA (i.e., Superfund) risk assessment, modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench mark used for risk assessment purposes. Furthermore, the assumptions noted above reflect a conservative approach to calculating the modeled cancer risks. For instance, according to the actual wind speed at the Subject Property most likely exceeds 2.25 mph[13]; thus at higher wind speeds, the concentration of a detected constituent would be dissipated and the cancer risk would be reduced. In addition, the calculations are based upon soil flux samples which were collected directly from the bare soil of the Subject Property. Additionally, clean fill and subsurface vapor barriers would likely reduce the potential release of COCs from the subsurface as these barriers would reduce the concentration of constituents detected at the surface of the Subject Property and in turn reduce the cancer risk.

However, it should be noted that the calculations are to be used only as a preliminary assessment of the soil gas conditions at the ground surface of the Subject Property per the controlled conditions of the static measurements used in this calculation. In addition, the model utilized was conservative, and although the

[13] According to the Illinois State Climatologist Office, the average wind speed was 9.25 knots or approximately 10.6 mph for the closest municipality to Lyons, IL (Chicago) over a period of 30 years (1961 to 1990) (http://www.sws.uiuc.edu/atmos/statecli/Roses/wind_climatology.htm)

flux chambers were located throughout the Subject Property, and in the park across Lawndale Avenue, the findings are only specific to a limited area surrounding the flux chamber.

In comparison with soil gas concentrations detected as part of the Soil Gas Survey and previous soil gas samples collected at the Subject Property, the laboratory data collected and modeled scenarios suggest that the detected constituents present at six feet bgs are significantly dissipated or are absent at the surface of the Subject Property. Possible remedies to further limit the exposure of the detected constituents to the surface of the Subject Property include installation of a subsurface vapor barrier beneath the proposed recreation areas of the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting subsurface would require maintenance and upkeep for the lifetime of the Subject Property. In addition, the venting system may require air permits from IEPA to discharge VOCs into the ambient air. Based on the calculated risks and given the intended use of the Subject Property for outdoor recreation, BB&J has no further sampling recommendations regarding the soil flux survey. However, if the intended use for the Subject Property changes, further investigation, may be necessary to further investigate risks associated with potential VOCs emitted to the surface of the Subject Property.

TABLES

Table 1: Summary of Soil Laboratory Analytical Results

										Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route [3,4]						
				Residential[1]		Industrial-Commercial[2]		Construction Worker[2]				Ground-water Migration pH range (7.25 to 7.74)		Ground-water Migration pH range (7.75 to 8.24)		Ground-water Migration pH range (8.25 to 8.74)		Background Concentration of Chemicals [5,6]
Soil Sample ID / Depth[7]	**GP-1 (0.0-2.0) (mg/kg)**	**GP-2 (4.0-6.0) (mg/kg)**	**GP-3 (4.0-6.0) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**(mg/kg)**
pH	8.61	8.21	7.65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																		
Acenaphthene	3.38	ND	ND	4,700	NRO	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	NA	NA	0.13
Anthracene	3.52	ND	ND	23,000	NRO	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	NA	NA	0.40
Benzo(a)anthracene	**2.63**	ND	ND	0.9	NRO	8	NRO	170	NRO	2	8	NA	NA	NA	NA	NA	NA	1.8
Benzo(a)pyrene	**2.72**	ND	ND	0.9	NRO	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	NA	NA	2.1
Benzo(b)fluoranthene	**3.33**	ND	ND	0.9	NRO	8	NRO	170	NRO	5	25	NA	NA	NA	NA	NA	NA	2.1
Benzo(k)fluouranthene	2.07	ND	ND	9	NRO	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	NA	NA	1.70
Benzo(ghi)perylene	1.31	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	NRO
Carbazole	**0.84**	ND	ND	32	NRO	290	NRO	6,200	NRO	0.6	2.8	NA	NA	NA	NA	NA	NA	NRO
Chrysene	3.98	ND	ND	88	NRO	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	0.57	ND	ND	0.9	NRO	1	NRO	17	NRO	2	7.6	NA	NA	NA	NA	NA	NA	0.42
Fluoranthene	3.48	ND	ND	3,100	NRO	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	NA	NA	4.1
Fluorene	0.48	ND	ND	3,100	NRO	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	NA	NA	0.018
Ideno(1,2,3-cd)pyrene	**1.38**	ND	ND	0.9	NRO	8	NRO	170	NRO	14	69	NA	NA	NA	NA	NA	NA	1.6
Naphthalene	0.36	ND	ND	1,600	170	41,000	270	4,100	2	12	18	NA	NA	NA	NA	NA	NA	0.2
Phenanthrene	1.77	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NA	NA	2.5
Pyrene	4.21	ND	ND	2,300	NRO	61,000	NRO	61,000	NRO	4200	21000	NA	NA	NA	NA	NA	NA	3
RCRA metals																		
Arsenic	3.10	8.2	7	NRO	750	13 [6]	1,200	61	25,000	NA	NA	30	120	31	120	32	130	13
Barium	28.3	125	85.6	5,500	690,000	140,000	910,000	14,000	870,000	NA	NA	1,800	1,801	2,100	2,100	NRO	NRO	110
Cadmium	0.6	125	0.7	78	1,800	2,000	2,800	200	59,000	NA	NA	59	590	430	4,300	NRO	NRO	0.6
Chromium	9.9	27.8	17.4	230	270	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	NRO	NRO	16.2
Lead	35.4	21.5	22	400	NRO	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	107	1,420	36
Mercury[9]	**0.11**	ND	ND	23	10	610	16	61	0.1	NA	NA	6.4	32	8	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides / PCBs	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 Title 35 IAC 742, Appendix B, Table A
2 Title 35 IAC 742, Appendix B, Table B
3 Title 35 IAC 742, Appendix B, Table C
4 Title 35 IAC 742, Appendix B, Table D
5 Title 35 IAC 742, Appendix A, Table H.
6 Title 35 IAC 742, Appendix A, Table G.
7 Soil boring depths are presented in feet bgs.
8 The ingestion route for industrial/commercial properties defers to the default background standard, established in Title 35 IAC 742, Appendix A, Table B.
9 As indicated in Title 35 IAC 742, Appendix B, Table B, the value for Ingestion is based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). The value for Inhalation is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). The inhalation remediation objective only applies at sites where elemental mercury is a contaminant of concern.

Black Bold indicates an exceedance of an industrial/commercial or construction worker IEPA TACO RO and/or exceedance of the Soil Component of the Ground-Water Ingestion Exposure Route

Green Bold indicates an exceedance of a residential IEPA TACO RO

Acronyms:
bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits

Prepared by: KAB / 5.22.2007
Checked by: AWB / 6.11.2007

Table 2: Summary of Soil Gas Laboratory Analytical Results

				Maximum Concentration Detected at Subject Property	BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards[1]			Explosive Range	
Soil - Gas ID	SG - 16	SG - 17	SG - 18		Less Protective Target Concentrations	Best Estimate Target Concentrations	More Protective Target Concentrations	Lower Explosive Limit (LEL) [3]	Upper Explosive Limit (UEL) [3]
Soil Sample Depth[2]	6.0	6.0	6.0						
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(%)	(%)
USEPA Method T0-15 (VOCs)									
Acetone	ND	140	ND	140	819,400	291,800	163,100	NA	NA
Benzene	92	69	61	92	15,770	3,831	1,921	NA	NA
2-Butanone (MEK)	32	60	59	60	3,444,000	1,121,000	556,400	NA	NA
Carbon disulfide	70	120	24	120	2,642,000	664,200	349,000	NA	NA
Cyclohexane	52	50	23	52	NMD	NMD	NMD	NA	NA
1,1-Dichloroethane	5.1	12	ND	12	2,576,000	605,300	289,800	NA	NA
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	13	ND	ND	13	181,300	42,630	20,370	NA	NA
Ethylbenzene	9.1	7.1	6.4	9.1	13,000	3,057	1,468	NA	NA
n-Heptane (Heptane)	57	62	19	62	NMD	NMD	NMD	NA	NA
n-Hexane (Hexane)	100	96	37	100	4,212,000	1,272,000	803,500	NA	NA
2-Hexanone	ND	ND	27	27	NMD	NMD	NMD	NA	NA
4-Methyl-2-pentanone (Methylisobutylketone)	ND	ND	7.9	7.9	354,500	95,550	46,120	NA	NA
Propene	1200	990	480	1,200	NMD	NMD	NMD	NA	NA
Tetrachloroethene (Tetrachloroethylene)	67	40	200	200	4,961	1,156	549	NA	NA
Toluene	38	45	32	45	1,777,000	430,500	215,200	NA	NA
Trichloroethene (Trichloroethylene)	13	ND	ND	13	123.9	29.4	14.32	NA	NA
1,2,4-Trimethylbenzene	7.3	6.8	12	12	37,090	8,422	3,826	NA	NA
Vinyl chloride	**410**	49	ND	410	1,180	298	157.4	NA	NA
m,p-Xylene	14	15	17	17	NMD	NMD	NMD	NA	NA
o-Xylene	6	5.8	7.1	7.1	NA	7,533,000	3,766,000	NA	NA
USEPA Method 8015B	(%)	(%)	(%)	(%)					
Methane	2.0	1.6	0.099	2.0	NMD	NMD	NMD	5.0	15.0

Notes:

[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model and the known maximum concentration detected at the proposed Community Center (http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm). As the proposed future development will be used for commercial purposes, the standard default exposure parameters in the Johnson & Ettinger Vapor Intrusion Model were changed to reflect this use. The list of parameters that were changed can be found in the USEPA Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (RAGS Volume I), dated March 25, 1991, "Summary of Standard Default Exposure Factors", Commercial/Industrial Use, Inhalation of Contaminants Exposure Pathway.

[2] Depths indicated in feet below ground surface (bgs).

[3] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.

Bold indicates an exceedance of a BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards Target Concentration.

Acronyms:

NA: Not applicable
ND: Not detected
NMD: No model data for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: MLH / 5.23.2007
Checked By: AWB / 6.11.2007

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:27:52 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08[g/mole] Henrys Constant: 0.0008474723[unitless]
Diffusivity in Air: 0.1240[cm^2/sec] Diffusivity in Water: 1.140e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007951[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.005227[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001751
Ground Water Attenuation Factor (α_{GW}): 0.001311
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 511[$\mu g/m^3$] or 215.3[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8.194e5[$\mu g/m^3$] or 3.452e5[ppbv]; Ground Water: 9.795e5[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 2.918e5[$\mu g/m^3$] or 1.229e5[ppbv]; Ground Water: 4.598e5[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1.631e5[$\mu g/m^3$] or 6.870e4[ppbv]; Ground Water: 3.363e5[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:29:25 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11[g/mole] Henrys Constant: 0.1152703[unitless]
Diffusivity in Air: 8.800e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000078[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 25 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00554[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000377[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001368
Ground Water Attenuation Factor (α_{GW}): 0.0001257
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 5.241[$\mu g/m^3$] or 1.642[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.577e4[$\mu g/m^3$] or 4939.[ppbv]; Ground Water: 447.9[μg/L]

Best Estimate Target Concentrations
Soil Gas: 3831.[$\mu g/m^3$] or 1200.[ppbv]; Ground Water: 361.9[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1921.[$\mu g/m^3$] or 601.8[ppbv]; Ground Water: 348.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:30:38 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11[g/mole] Henrys Constant: 0.001130542[unitless]
Diffusivity in Air: 8.080e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00518[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.003388[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001303
Ground Water Attenuation Factor (α_{GW}): 0.000938
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1460[$\mu g/m^3$] or 495.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.444e6[$\mu g/m^3$] or 1.169e6[ppbv]; Ground Water: 3.092e6[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.121e6[$\mu g/m^3$] or 3.803e5[ppbv]; Ground Water: 1.377e6[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.564e5[$\mu g/m^3$] or 1.888e5[ppbv]; Ground Water: 9.705e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:07 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13[g/mole] Henrys Constant: 0.7157535[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006547[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003847[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001539
Ground Water Attenuation Factor (α_{GW}): 0.0001282
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1022[$\mu g/m^3$] or 328.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.642e6[$\mu g/m^3$] or 8.490e5[ppbv]; Ground Water: 1.344e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.642e5[$\mu g/m^3$] or 2.134e5[ppbv]; Ground Water: 1.114e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.490e5[$\mu g/m^3$] or 1.122e5[ppbv]; Ground Water: 1.078e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 13:02:28 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49[g/mole] Henrys Constant: 0.2477062[unitless]
Diffusivity in Air: 0.1260[cm^2/sec] Diffusivity in Water: 6.500e-6[cm^2/sec]
Unit Risk Factor: 0.000001[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007931[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0004727[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001749
Ground Water Attenuation Factor (α_{GW}): 0.0001565
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 4.088[$\mu g/m^3$] or 1.981[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8865.[$\mu g/m^3$] or 4296.[ppbv]; Ground Water: 127.3[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 2338.[$\mu g/m^3$] or 1133.[ppbv]; Ground Water: 105.4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1297.[$\mu g/m^3$] or 628.7[ppbv]; Ground Water: 102.0[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:55 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethane CAS Number: 75343
Molecular Weight: 98.96[g/mole] Henrys Constant: 0.1239506[unitless]
Diffusivity in Air: 7.420e-2[cm^2/sec] Diffusivity in Water: 1.050e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.5[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003269[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001206
Ground Water Attenuation Factor (α_{GW}): 0.0001093
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 730[$\mu g/m^3$] or 180.5[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.576e6[$\mu g/m^3$] or 6.368e5[ppbv]; Ground Water: 6.707e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.053e5[$\mu g/m^3$] or 1.496e5[ppbv]; Ground Water: 5.386e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.898e5[$\mu g/m^3$] or 7.164e4[ppbv]; Ground Water: 5.179e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:03 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: cis-1,2-Dichloroethylene CAS Number: 156592
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.08772779[unitless]
Diffusivity in Air: 7.360e-2[cm^2/sec] Diffusivity in Water: 1.130e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.035[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004634[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003552[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001199
Ground Water Attenuation Factor (α_{GW}): 0.0001186
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 51.1[$\mu g/m^3$] or 12.9[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.813e5[$\mu g/m^3$] or 4.575e4[ppbv]; Ground Water: 6226.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.263e4[$\mu g/m^3$] or 1.076e4[ppbv]; Ground Water: 4912.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.037e4[$\mu g/m^3$] or 5140.[ppbv]; Ground Water: 4706.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:40 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.1364569[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000011[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004722[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003106[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001216
Ground Water Attenuation Factor (α_{GW}): 0.000104
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 3.716[$\mu g/m^3$] or 0.8564[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.300e4[$\mu g/m^3$] or 2995.[ppbv]; Ground Water: 322.4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 3057.[$\mu g/m^3$] or 704.4[ppbv]; Ground Water: 261.9[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1468.[$\mu g/m^3$] or 338.2[ppbv]; Ground Water: 252.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18[g/mole] Henrys Constant: 35.82923[unitless]
Diffusivity in Air: 0.2000[cm^2/sec] Diffusivity in Water: 7.770e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 25 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.01259[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000721[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.002296
Ground Water Attenuation Factor (α_{GW}): 0.0002348
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 2920[$\mu g/m^3$] or 829[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4.212e6[$\mu g/m^3$] or 1.196e6[ppbv]; Ground Water: 415.2[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.272e6[$\mu g/m^3$] or 3.611e5[ppbv]; Ground Water: 347.0[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 8.035e5[$\mu g/m^3$] or 2.281e5[ppbv]; Ground Water: 336.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:59 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16[g/mole] Henrys Constant: 0.002453269[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004755[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.001889[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001222
Ground Water Attenuation Factor (α_{GW}): 0.0005711
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 116.8[$\mu g/m^3$] or 28.53[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.545e5[$\mu g/m^3$] or 8.658e4[ppbv]; Ground Water: 1.712e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 9.555e4[$\mu g/m^3$] or 2.334e4[ppbv]; Ground Water: 8.337e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 4.612e4[$\mu g/m^3$] or 1.127e4[ppbv]; Ground Water: 6.698e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:39:34 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83[g/mole] Henrys Constant: 0.3362604[unitless]
Diffusivity in Air: 7.200e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0.000003[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004532[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002767[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001179
Ground Water Attenuation Factor (α_{GW}): 0.00009288
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 1.363[$\mu g/m^3$] or 0.201[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4961.[$\mu g/m^3$] or 731.9[ppbv]; Ground Water: 53.04[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1156.[$\mu g/m^3$] or 170.6[ppbv]; Ground Water: 43.63[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 549.0[$\mu g/m^3$] or 80.99[ppbv]; Ground Water: 42.16[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:10 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14[g/mole] Henrys Constant: 0.1257474[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 8.600e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005477[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003617[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001207
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 584[$\mu g/m^3$] or 155.1[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.777e6[$\mu g/m^3$] or 4.719e5[ppbv]; Ground Water: 4.738e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.305e5[$\mu g/m^3$] or 1.143e5[ppbv]; Ground Water: 3.848e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.152e5[$\mu g/m^3$] or 5.714e4[ppbv]; Ground Water: 3.708e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:41 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39[g/mole] Henrys Constant: 0.2057688[unitless]
Diffusivity in Air: 7.900e-2[cm^2/sec] Diffusivity in Water: 9.100e-6[cm^2/sec]
Unit Risk Factor: 0.00011[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004973[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003159[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001264
Ground Water Attenuation Factor (α_{GW}): 0.0001058
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.03716[$\mu g/m^3$] or 0.00692[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 123.9[$\mu g/m^3$] or 23.07[ppbv]; Ground Water: 2.089[μg/L]

Best Estimate Target Concentrations
Soil Gas: 29.40[$\mu g/m^3$] or 5.475[ppbv]; Ground Water: 1.708[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 14.32[$\mu g/m^3$] or 2.666[ppbv]; Ground Water: 1.648[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:41:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.09297282[unitless]
Diffusivity in Air: 6.060e-2[cm^2/sec] Diffusivity in Water: 7.920e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.003815[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002781[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001031
Ground Water Attenuation Factor (α_{GW}): 0.00009332
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 8.687[$\mu g/m^3$] or 1.768[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.709e4[$\mu g/m^3$] or 7550.[ppbv]; Ground Water: 1258.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 8422.[$\mu g/m^3$] or 1714.[ppbv]; Ground Water: 1001.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3826.[$\mu g/m^3$] or 778.7[ppbv]; Ground Water: 961.1[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:00 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5[g/mole] Henrys Constant: 0.7413626[unitless]
Diffusivity in Air: 0.1060[cm^2/sec] Diffusivity in Water: 1.230e-5[cm^2/sec]
Unit Risk Factor: 0.0000088[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003938[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001559
Ground Water Attenuation Factor (α_{GW}): 0.0001311
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.4645[$\mu g/m^3$] or 0.1818[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1180.[$\mu g/m^3$] or 461.9[ppbv]; Ground Water: 5.768[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 298.0[$\mu g/m^3$] or 116.6[ppbv]; Ground Water: 4.779[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 157.4[$\mu g/m^3$] or 61.62[ppbv]; Ground Water: 4.625[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:35 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.08789842[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005478[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003933[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.000131
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 10220[$\mu g/m^3$] or 2355[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: Saturation[$\mu g/m^3$] or Saturation[ppbv]; Ground Water: Solubility[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 7.533e6[$\mu g/m^3$] or 1.736e6[ppbv]; Ground Water: Solubility[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 3.766e6[$\mu g/m^3$] or 8.678e5[ppbv]; Ground Water: Solubility[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-1	Carbon disulfide	5	14	9	795	0.0075	0.0004	0.06	0.0014	2.36E-05	100	10	1.5	1	1.57E-04	700	0.0%	2.25E-13
	2-Butanone	5	5.4	0.4	795	0.0075	0.0004	0.06	0.0001	1.05E-06	100	10	1.5	1	6.99E-06	1000	0.0%	6.99E-15
	PCE	5	18	13	795	0.0075	0.0004	0.06	0.0020	3.41E-05	100	10	1.5	1	2.27E-04	0.81	0.0%	2.80E-10
																	Total Risk:	**2.81E-10**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_f: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2	
HEIGHT	2.44E+02	cm	2.44E+00	M	
ER	5.00E-01	per hour			
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min	

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-3	Carbon disulfide	5	5.7	0.7	790	0.0075	0.0004	0.06	0.0001	1.85E-06	100	10	1.5	1	1.23E-05	700	0.0%	1.76E-14
	Acetone	5	51	46	790	0.0075	0.0004	0.06	0.0073	1.21E-04	100	10	1.5	1	8.09E-04	350	0.0%	2.31E-12
	TCE	5	13	8	790	0.0075	0.0004	0.06	0.0013	2.11E-05	100	10	1.5	1	1.41E-04	0.022	0.6%	6.39E-09
	PCE	5	973	968	790	0.0075	0.0004	0.06	0.1532	2.55E-03	100	10	1.5	1	1.70E-02	0.81	2.1%	2.10E-08
																	Total Risk:	**2.74E-08**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_f: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2
HEIGHT	2.44E+02	cm	2.44E+00	M
ER	5.00E-01	per hour		
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-4	Carbon disulfide	5	7	2	790	0.0075	0.0004	0.06	0.0003	5.27E-06	100	10	1.5	1	3.52E-05	700	0.0%	5.02E-14
	Acetone	5	36	31	790	0.0075	0.0004	0.06	0.0049	8.18E-05	100	10	1.5	1	5.45E-04	350	0.0%	1.56E-12
	2-Butanone	4.99	5	0.01	790	0.0075	0.0004	0.06	0.0000	2.64E-08	100	10	1.5	1	1.76E-07	1000	0.0%	1.76E-16
	Ethyl acetate	5	12	7	790	0.0075	0.0004	0.06	0.0011	1.85E-05	100	10	1.5	1	1.23E-04	3200	0.0%	3.85E-14
	m,p-Xylene	5	10	5	790	0.0075	0.0004	0.06	0.0008	1.32E-05	100	10	1.5	1	8.79E-05	7000	0.0%	1.26E-14
	Toluene	5	75	70	790	0.0075	0.0004	0.06	0.0111	1.85E-04	100	10	1.5	1	1.23E-03	400	0.0%	3.08E-12
																	Total Risk:	**4.74E-12**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_f: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2	
HEIGHT	2.44E+02	cm	2.44E+00	M	
ER	5.00E-01	per hour			
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min	

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_f) (ug/min-m^2)	Flux (Er_f) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-5	Carbon disulfide	5	24	19	820	0.0075	0.0004	0.06	0.0029	4.83E-05	100	10	1.5	1	3.22E-04	700	0.0%	4.60E-13
	Chloromethane	5	7.8	2.8	820	0.0075	0.0004	0.06	0.0004	7.11E-06	100	10	1.5	1	4.74E-05	2.4	0.0%	1.98E-11
	Propene	5	16	11	820	0.0075	0.0004	0.06	0.0017	2.79E-05	100	10	1.5	1	1.86E-04	2.4	0.0%	7.76E-11
	Toluene	5	14	9	820	0.0075	0.0004	0.06	0.0014	2.29E-05	100	10	1.5	1	1.52E-04	400	0.0%	3.81E-13
																	Total Risk:	9.82E-11

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_f) : Calculated flux per equations in report text
A_f: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06 cm2	1.86E+02	m2	
HEIGHT	2.44E+02 cm	2.44E+00	M	
ER	5.00E-01 per hour			
Q (0.5/hr)	6.30E+04 cm3/sec	3.78E+00	m3/min	Prepared By: KLM / 6.7.2007 Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_f) (ug/min-m^2)	Flux (Er_f) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-6	Carbon disulfide	5	5.6	0.6	820	0.0075	0.0004	0.06	0.0001	1.52E-06	100	10	1.5	1	1.02E-05	700	0.0%	1.45E-14
	Acetone	5	37	32	820	0.0075	0.0004	0.06	0.0049	8.13E-05	100	10	1.5	1	5.42E-04	350	0.0%	1.55E-12
	PCE	5	9.3	4.3	820	0.0075	0.0004	0.06	0.0007	1.09E-05	100	10	1.5	1	7.28E-05	0.81	0.0%	8.99E-11
																	Total Risk:	**9.15E-11**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_f) : Calculated flux per equations in report text
A_f: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2	
HEIGHT	2.44E+02	cm	2.44E+00	M	
ER	5.00E-01	per hour			
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min	Prepared By: KLM / 6.7.2007 Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-7	PCE	5	14	9	795	0.0075	0.0004	0.06	0.0014	2.36E-05	100	10	1.5	1	1.57E-04	0.81	0.0%	1.94E-10
																	Total Risk:	**1.94E-10**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2
HEIGHT	2.44E+02	cm	2.44E+00	M
ER	5.00E-01	per hour		
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-8	2-Butanone	5	6.5	1.5	790	0.0075	0.0004	0.06	0.0002	3.96E-06	100	10	1.5	1	2.64E-05	1000	0.0%	2.64E-14
	Toluene	5	6.2	1.2	790	0.0075	0.0004	0.06	0.0002	3.16E-06	100	10	1.5	1	2.11E-05	400	0.0%	5.27E-14
	Acetone	5	21	16	790	0.0075	0.0004	0.06	0.0025	4.22E-05	100	10	1.5	1	2.81E-04	350	0.0%	8.04E-13
																	Total Risk:	**8.83E-13**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2
HEIGHT	2.44E+02	cm	2.44E+00	M
ER	5.00E-01	per hour		
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_f) (ug/min-m^2)	Flux (Er_f) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SG-9	Benzene	5	6.5	1.5	830	0.0075	0.0004	0.06	0.0002	3.77E-06	100	10	1.5	1	2.51E-05	0.31	0.0%	8.10E-11
	Carbon disulfide	5	29	24	830	0.0075	0.0004	0.06	0.0036	6.02E-05	100	10	1.5	1	4.02E-04	700	0.0%	5.74E-13
	cis-1,2 DCE	5	100	95	830	0.0075	0.0004	0.06	0.0143	2.38E-04	100	10	1.5	1	1.59E-03	35	0.0%	4.54E-11
	trans-1,2 DCE	5	11	6	830	0.0075	0.0004	0.06	0.0009	1.51E-05	100	10	1.5	1	1.00E-04	70	0.0%	1.43E-12
	n-Heptane	5	13	8	830	0.0075	0.0004	0.06	0.0012	2.01E-05	100	10	1.5	1	1.34E-04	200	0.0%	6.69E-13
	n-Hexane	5	9.8	4.8	830	0.0075	0.0004	0.06	0.0007	1.20E-05	100	10	1.5	1	8.03E-05	200	0.0%	4.02E-13
	TCE	5	35	30	830	0.0075	0.0004	0.06	0.0045	7.53E-05	100	10	1.5	1	5.02E-04	0.022	2.3%	2.28E-08
	PCE	5	6.3	1.3	830	0.0075	0.0004	0.06	0.0002	3.26E-06	100	10	1.5	1	2.18E-05	0.81	0.0%	2.69E-11
	Vinyl chloride	5	6.8	1.8	830	0.0075	0.0004	0.06	0.0003	4.52E-06	100	10	1.5	1	3.01E-05	0.28	0.0%	1.08E-10
	1,2,4-Trimethylbenzene	5	6.4	1.4	830	0.0075	0.0004	0.06	0.0002	3.51E-06	100	10	1.5	1	2.34E-05	6	0.0%	3.90E-12
	Toluene	5	6.8	1.8	830	0.0075	0.0004	0.06	0.0003	4.52E-06	100	10	1.5	1	3.01E-05	400	0.0%	7.53E-14
	m,p-Xylene	5	6.3	1.3	830	0.0075	0.0004	0.06	0.0002	3.26E-06	100	10	1.5	1	2.18E-05	7000	0.0%	3.11E-15
	Naphthalene	5	13	8	830	0.0075	0.0004	0.06	0.0012	2.01E-05	100	10	1.5	1	1.34E-04	3.1	0.0%	4.32E-11
																	Total Risk:	**2.31E-08**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_f) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2
HEIGHT	2.44E+02	cm	2.44E+00	M
ER	5.00E-01	per hour		
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min

Prepared By: KLM / 6.7.2007
Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-10	Carbon disulfide	5	11	6	825	0.0075	0.0004	0.06	0.0009	1.52E-05	100	10	1.5	1	1.01E-04	700	0.0%	1.44E-13
	PCE	5	14	9	825	0.0075	0.0004	0.06	0.0014	2.27E-05	100	10	1.5	1	1.52E-04	0.81	0.0%	1.87E-10
	TCE	5	11	6	825	0.0075	0.0004	0.06	0.0009	1.52E-05	100	10	1.5	1	1.01E-04	0.022	0.5%	4.59E-09
	Propene	5	12	7	825	0.0075	0.0004	0.06	0.0011	1.77E-05	100	10	1.5	1	1.18E-04	2.4	0.0%	4.91E-11
	cis-1,2 DCE	5	6.4	1.4	825	0.0075	0.0004	0.06	0.0002	3.54E-06	100	10	1.5	1	2.36E-05	35	0.0%	6.73E-13
																	Total Risk:	**4.83E-09**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2	
HEIGHT	2.44E+02	cm	2.44E+00	M	
ER	5.00E-01	per hour			
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min	Prepared By: KLM / 6.7.2007 Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-11	Carbon disulfide	5	7.4	2.4	830	0.0075	0.0004	0.06	0.0004	6.02E-06	100	10	1.5	1	4.02E-05	700	0.0%	5.74E-14
	Acetone	5	26	21	830	0.0075	0.0004	0.06	0.0032	5.27E-05	100	10	1.5	1	3.51E-04	350	0.0%	1.00E-12
	PCE	5	43	38	830	0.0075	0.0004	0.06	0.0057	9.54E-05	100	10	1.5	1	6.36E-04	0.81	0.1%	7.85E-10
																	Total Risk:	**7.86E-10**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Calculations for flux and room concentration as described in text

Ar	1.86E+06	cm2	1.86E+02	m2	m2	
HEIGHT	2.44E+02	cm	2.44E+00	M	M	
ER	5.00E-01	per hour				
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min	m3/min	Prepared By: KLM / 6.7.2007 Checked By: AWB / 6.13.2007

Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	Flux (Er_i) (ug/sec-m^2)	A_r (m^2)	W (m)	H (m)	WS (m/sec)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
SF-13	Carbon disulfide	5	5.9	0.9	820	0.0075	0.0004	0.06	0.0001	2.29E-06	100	10	1.5	1	1.52E-05	700	0.0%	2.18E-14
																	Total Risk:	**2.18E-14**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Field
Q = field ventilation rate = W * H * WS
W = width of field perpendicular to the wind
H = height of box perpendicular to the wind
WS = Wind speed
Cr-e: Calculated air concentration in outside volume
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

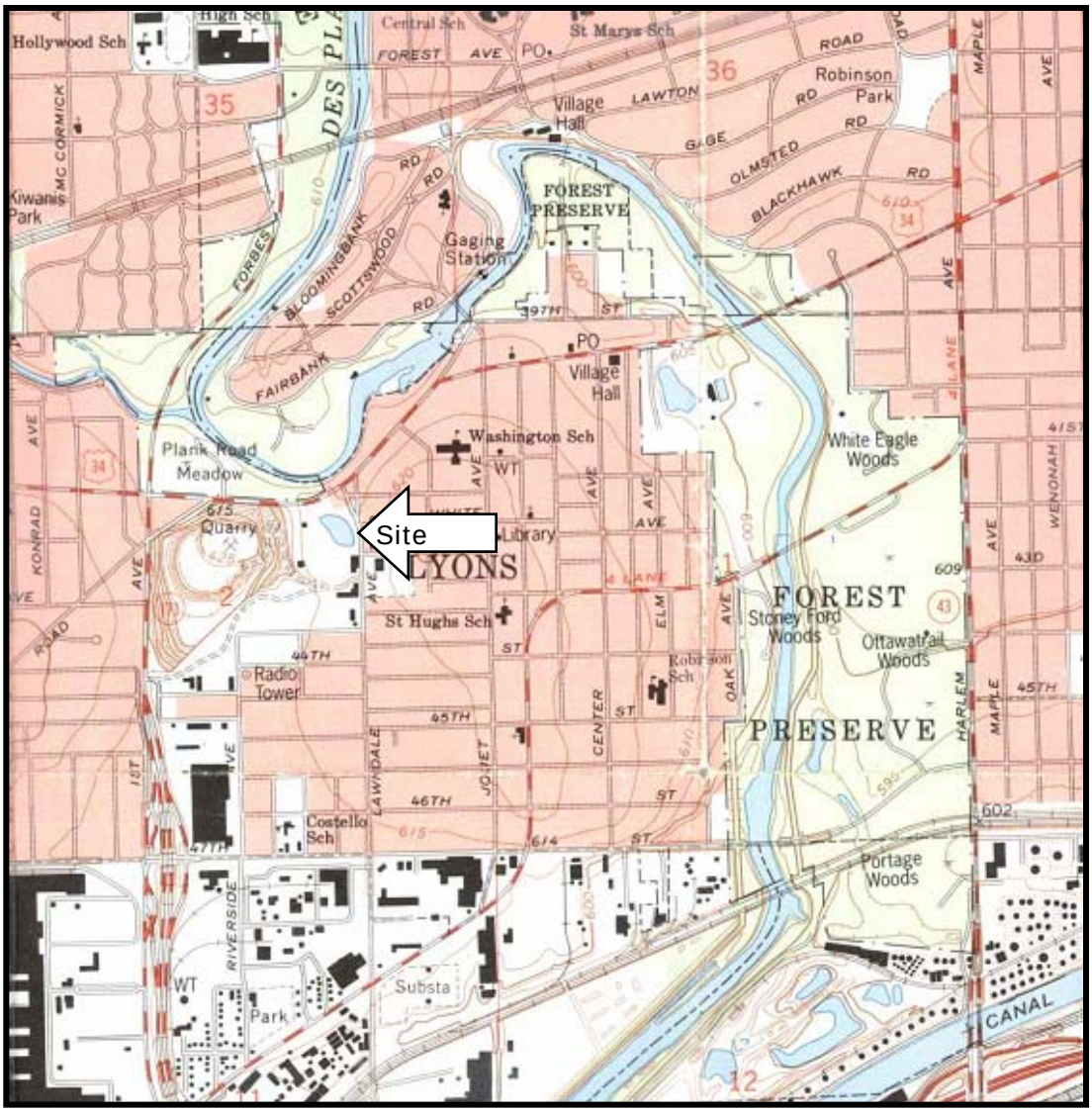
Calculations for flux and room concentration as described in text

Ar	1.86E+06 cm2	1.86E+02	m2	
HEIGHT	2.44E+02 cm	2.44E+00	M	
ER	5.00E-01 per hour			
Q (0.5/hr)	6.30E+04 cm3/sec	3.78E+00	m3/min	Prepared By: KLM / 6.7.2007
				Checked By: AWB / 6.13.2007

FIGURES

Source: U.S. Geological Survey Quadrangle Berwyn, Illinois. 7.5 Minute Series (Topographic), Dated 1993.
T 38N
R 12E
S 36

N



0 1/4 1/2 1 MILE

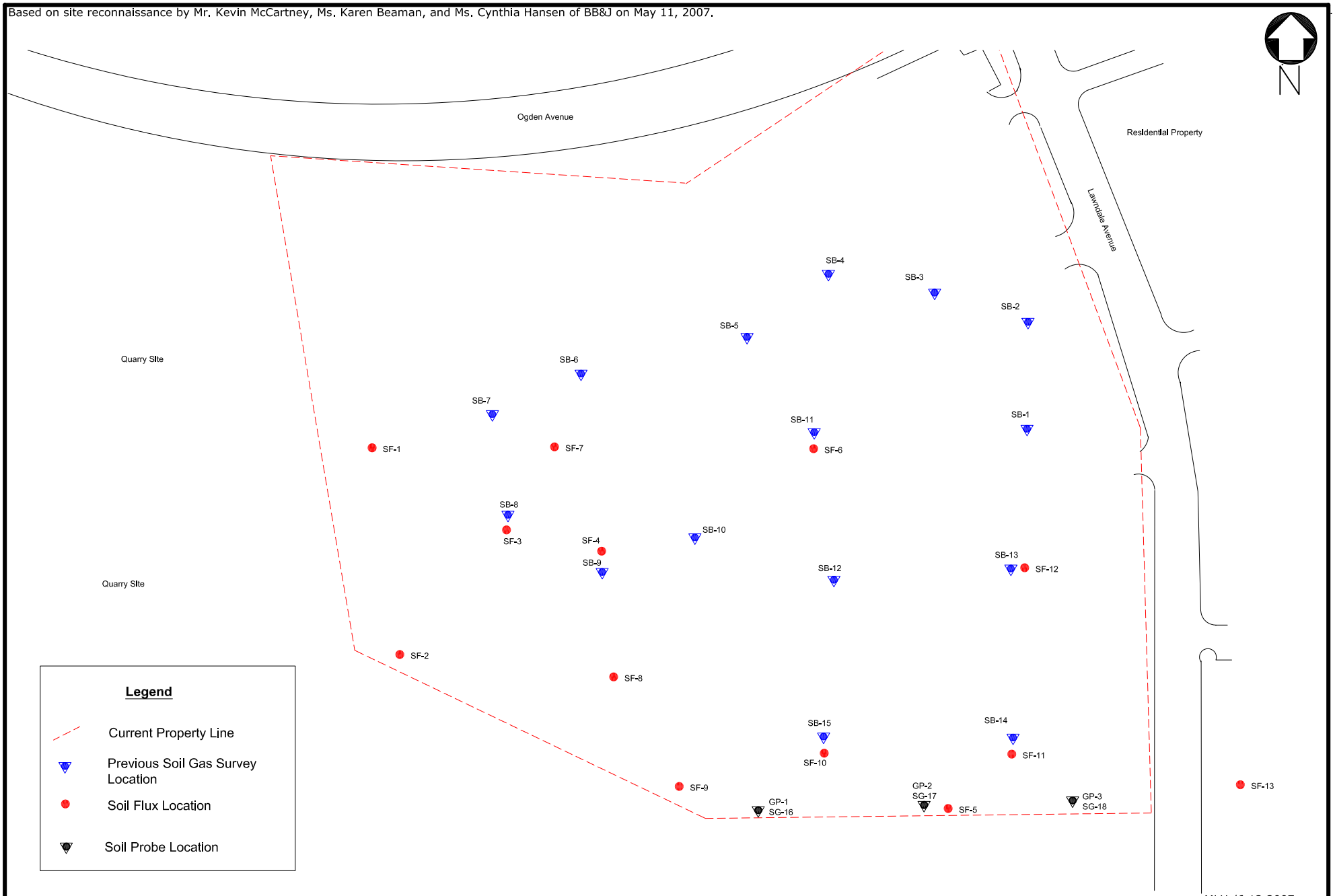
0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: KAB / 6.7.2007
Checked by/Date: KLM / 6.7.2007

Village of Lyons Future Use Development SW Corner of Ogden & Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project 0253901 Figure 1

Based on site reconnaissance by Mr. Kevin McCartney, Ms. Karen Beaman, and Ms. Cynthia Hansen of BB&J on May 11, 2007.



NOT TO SCALE

Prepared by/Date: MLH /6.12.2007
Checked by/Date: AWB /6.12.2007

Village of Lyons
Future Use Evaluation
Southwest Corner of Ogden & Lawndale Avenues
Lyons, Illinois

BRADBURNE, BRILLER & JOHNSON, LLC
www.bbjgroup.com

Site Plan with Soil, Soil Vapor, and Soil Flux Sampling Locations

Project No. 0253901

Figure 2

APPENDIX A

FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

The media targeted by this subsurface assessment and the sampling methods and protocol are described in this appendix.

A.1 Sampling Equipment

The following sampling equipment was used during field activities at the Subject Property:

- Geoprobe® direct-push technology (DPT) sampling equipment;
- Rig utilizing a 6.25" auger, split spoon samplers, and capable of air rotary drilling;
- A photo-ionization detector (PID), equipped with an 10.6 electron volt (eV) lamp for field-screening soil samples and for health and safety air monitoring;
- Clean, plastic "Ziplock" bags for use in describing soil samples and for field screening purposes;
- Laboratory-supplied containers for the collection of soil gas, soil and ground-water samples targeted for laboratory analyses;
- Phosphate-free soap, potable water and distilled water for equipment cleaning;
- Laboratory-supplied deionized water (purge water) for the preparation of quality assurance/quality control (QA/QC) samples;
- Disposable latex and/or nitrile gloves;
- Sample shipping containers (e.g., coolers); and,
- Sealed trip blanks, prepared by the laboratory using deionized water and shipped with the sample coolers.

A.2 Soil probe/Soil Probe Advancement and Soil Sampling Procedures

This section describes the various types of soil probe and/or soil probe techniques that were used, as well as specific soil sample collection procedures.

A.2.1 DPT Advancement Procedures – Soil Gas

A Geoprobe® DPT sampling machine was used to create borings for the soil gas probes. The machine advances a soil probe by means of a hydraulic hammer that drove the sampler vertically into the ground. Once the boring is created, the 1/4-inch diameter poly tubing and attached soil gas probe can be inserted. Approximately a foot of sand is poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite is poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe is then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. At least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

A.2.2 Hollow Stem Auger Procedures

Soil samples are collected using a 1.5-inch diameter, 18-inch steel sampling hollow stem auger. A hydraulic auger, attached to a truck, is used to drill to a desired depth, then a split spoon barrel (SSB) is advanced to the desired depth and a discrete sample is collected.

A.2.3 Soil Sample Screening and Collection Procedures

Upon retrieval, the soil sample was removed from the sampler and visually classified by field personnel. Each soil sample was split into two portions and placed in re-sealable plastic bags. One bag was placed into a cooler with ice, and the other was kept in a warm environment (approximately 70 degrees Fahrenheit or greater) for approximately 10 minutes in an effort to promote volatilization of potential organic vapors within the soil.

After approximately 10 minutes, headspace screening using a PID was performed on the soil sample kept in the warm environment. The PID was calibrated daily in accordance with the manufacturer's directions. After a minimum of 10 minutes within a warm environment, the probe on the PID was inserted into the soil bag, and a sample of headspace air was withdrawn. The maximum reading was recorded in the field book and/or on the soil probe log. Readings were recorded in parts per million, referencing the calibration vapor used.

Based on field screening and visual observations, field personnel selected a "worst case" soil sample from each location generally based on the following criteria:

- The soil sample that exhibited the highest PID screening results; and/or,
- Appeared to exhibit the most prominent staining; and/or,
- Exhibited the strongest potential chemical odor (or, in the absence of an apparent chemical odor, the strongest anomalous odor, as noted).

The selected soil sample's corresponding soil bag contained in the cooler on ice was then packed in the appropriate laboratory-supplied containers for shipment to the laboratory for chemical analysis.

The soil contained in the soil bag used for field screening also was used for classification. The soil was visually classified by the on-site field personnel in accordance with American Society for Testing and Materials (ASTM) D 2488-93 and described on the appropriate field sampling form(s).

A.3 Soil Flux Chambers

Soil flux chambers are utilized to collect soil gas escaping from the ground surface. The flux chamber is placed on the ground and soil is packed around the flux chamber edges to create an air-tight environment inside the flux chambers. An "initial" soil flux sample of ambient air within the flux chamber is collected for each soil flux location by directly connecting a 400-mL Summa canister to the soil flux chamber. The valve is opened on the 400-mL canister and the reading on the vacuum gauge is recorded. If the gauge read at least -25 inches of mercury, the canister is allowed to fill. When the gauge read zero inches of mercury, the canister is disconnected. After a minimum of eight hours of allowing the flux chamber to equilibrate, BB&J resamples the flux chamber by again connecting the 400-mL Summa canisters to the flux chamber.

A.4 Probehole Abandonment

Following the advancement of the soil probes, the probeholes were backfilled with bentonite chips to approximately 6 inches below ground surface (bgs) inside the Subject Property. The surface above the probehole was then patched with asphalt or concrete, as necessary, to restore the original surface.

A.5 Quality Assurance/Quality Control

The following sections outline QA/QC protocol, sample containers, sample preservation, sample identification and chain-of-custody procedures implemented during sampling activities.

A.5.1 QA/QC Samples

Trip Blanks

Trip blank samples that consisted of de-ionized water, provided by the analytical laboratory, accompanied the cooler(s) containing the samples from the laboratory, to the field and back to the laboratory. The trip blanks were used to assess potential cross-contamination from the cooler and handling practices, in addition to assessing potential cross-contamination between samples. Trip blanks will be analyzed for BTEX only. One trip blank will be analyzed per cooler.

Equipment Rinsates

Equipment rinsates were collected to evaluate potential cross-contamination of samples during equipment cleaning procedures. The frequency of equipment rinsates was either one per every 20 samples of a particular media sampled (e.g., soil, ground water, etc.) or one for each type of sampling equipment used. The equipment rinsates were collected by pouring deionized water provided by the laboratory over the sampling equipment and into sample containers. The equipment rinsates were shipped with the soil and/or ground-water samples collected that day and were analyzed for the same suite of potential constituents of concern (COCs) as the environmental samples.

A.5.2 Sample Containers and Preservation

Sample containers prepared by a commercial vendor were provided by the laboratory.

A.5.3 Sample Identification

Prior to sample collection, the appropriate container (with preservative, if applicable) was labeled with the following information:

- Sample identification;
- Initials of collector;
- Date and time of collection;
- Analytical parameters requested; and,
- Preservative used.

Samples were packed in coolers (with containerized ice) complete with custody seals and transported via overnight courier to the laboratory. Chain-of-custody documentation outlined as follows accompanied each shipment of samples to the laboratory.

A.5.4 Chain-of-Custody Procedures

Chain-of-custody began when the pre-cleaned sample containers arrived in the field in coolers with signed and dated custody seals. At the time of sample collection, the labeled samples were placed into an iced cooler. A line-item chain-of-custody form was then completed by the sampler. Chain-of-custody allowed the samples to be traced from the time of collection to their receipt in the laboratory. Upon completion of all line items, the sampler signed, dated, listed the time, and checked the completeness of all descriptive information contained on the form. One copy of the completed chain-of-custody was retained by the sampler. Each individual who subsequently assumed responsibility for the samples signed the chain-of-custody record. The following items were included on the chain-of-custody form:

- Sample identification;
- Signature of sampler;
- Date and time of collection;
- Sample type (i.e., aqueous or soil);
- Sample location;
- Number, size, and type of containers;
- Analytical parameters requested;
- Preservative (where applicable);
- Signatures of personnel involved in the chain of possession; and,
- Dates and times of relinquishment and receipt.

A.6 Cleaning and Disposal of Investigation-Derived Wastes (IDW)

Cleaning procedures were employed to minimize the potential for cross-contamination, off-site migration of potential COCs, and personal exposure to COCs. Solid materials and fluids generated during site assessment activities were containerized on-site. The following sections summarize cleaning procedures and disposal of IDW.

A.6.1 Equipment Cleaning

Equipment involved in field sampling activities was cleaned prior to probehole advancement, sampling, or leaving the Subject Property. During soil sampling, cleaning of the sampling equipment was conducted between each sample interval and included the following:

- Removal of visible sediment using brush and non-phosphate soap and potable water mixture; and,
- Potable water rinse.

A.7 Record Keeping

BB&J field personnel documented the field activities (with corresponding times) and pertinent information in a dedicated project filed logbook. Information that was recorded included: the names and companies of on-site personnel (BB&J, client, subcontractors, etc), weather conditions, and the purpose of activities and details of the fieldwork (e.g., soil conditions, sampling depths, etc.).

APPENDIX B

SOIL BORING LOGS

Field Boring Log Page 1 of 3

Site File No.	10408 - 0253901	County Cook	Boring No.	GP-1	Monitor Well No.
Site File Name	Lyons Landfill - Lyons, IL		Surface Elev.	N/A	Completion Depth 12 feet
Fed ID No.			Auger Depth	N/A	Rotary Depth N/A
Quadrangle	Berwyn, IL		Date Started	5/11/2007	Date Finished 5/11/2007

UTM (or State Plane) Coordinates **NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Drill Rig w/Geoprobe®

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
G - Cynthia Hansen, BB&J
D - Brian Shoop, TerraTrace

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE REC	PENETROMETER VALUES (BLOW COUNTS)	OVA OR PID READINGS	REMARKS
1	FILL: Loose white and brown, with gravel; damp		1	A	G	48		1.5	Sampled 0-2 feet bgs
2			2						Petroleum odor
3	Loose black ASPHALT, damp		3	B	G			0.4	
4	FILL: Loose white FILL, with gravel; damp		4						
5	FILL: Very stiff black clay; damp		5	C	G	48		0.4	
6	FILL: Stiff orange and brown silty sand; damp		6						
7			7	D	G			0.1	
8	FILL: Very stiff gray clay; damp		8						
9	FILL: Loose tan and gray silty sand; damp		9	E	G	48		0.2	
10			10						
11	FILL: Loose gray silty sand; moist		11	F	G			0.1	
12			12						
	Boring terminated at 12 feet bgs								
13			13	G					
14			14						
15			15	H					
16			16						
17			17	I					
18			18						
19			19	J					
20			20						

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Site File No.	10408 - 0253901	County Cook	Boring No.	GP-2	Monitor Well No.
Site File Name	Lyons Landfill - Lyons, IL		Surface Elev.	N/A	Completion Depth 12 feet
Fed ID No.			Auger Depth	N/A	Rotary Depth N/A
Quadrangle	Berwyn, IL		Date Started	5/11/2007	Date Finished 5/11/2007

UTM (or State Plane) Coordinates **NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Drill Rig w/Geoprobe®

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
G - Cynthia Hansen, BB&J
D - Brian Shoop, TerraTrace

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE REC	PENETROMETER VALUES (BLOW COUNTS)	OVA OR PID READINGS	REMARKS
1	FILL: Medium dense dark brown with some gravel; moist		1	A	G	48		0.1	Sampled 4-6 feet bgs
2	FILL: Medium dense brown, with some gravel; moist		2						
3	FILL: Loose white gray, with some gravel and sand; moist		3	B	G			2.3	
4			4						
5			5	C	G	48		0.5	
6	FILL: Very stiff greenish-gray clay; damp		6						
7	FILL: Loose yellow-orange clayey sand; damp		7	D	G			0.5	
8			8						
9	FILL: Medium stiff tan orange sandy clay; damp		9	E	G	48		0.2	
10			10						
11	FILL: Loose light gray silty sand; moist		11	F	G			0.4	
12			12						
13	Boring terminated at 12 feet bgs		13	G					
14			14						
15			15	H					
16			16						
17			17	I					
18			18						
19			19	J					
20			20						

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log Page 3 of 3

Site File No.	10408 - 0253901	County Cook	Boring No.	GP-3	Monitor Well No.
Site File Name	Lyons Landfill - Lyons, IL		Surface Elev.	N/A	Completion Depth 12 feet
Fed ID No.			Auger Depth	N/A	Rotary Depth N/A
Quadrangle	Berwyn, IL		Date Started	5/11/2007	Date Finished 5/11/2007

UTM (or State Plane) Coordinates **NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Drill Rig w/Geoprobe®

BB&J Personnel

G - Kevin McCartney, BB&J
G - Karen Beaman, BB&J
G - Cynthia Hansen, BB&J
D - Brian Shoop, TerraTrace

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY	PENETROMETER VALUES (BLOW COUNTS)	OVA OR PID READINGS	REMARKS
1	FILL: Loose brown, with some gravel; damp		1	A	G	48		0.2	Sampled 4-6 feet bgs
2	FILL: Loose white, with some gravel and sand; damp		2						
3			3	B	G			0.1	
4	FILL: Very stiff dark green/gray/black clay; damp		4						
5	FILL: Soft light gray clayey sand, with some gravel; damp		5	C	G	48		0.4	
6	FILL: Medium stiff yellow brown silty sand, with trace gravel; damp		6						
7	FILL: Loose white sand with gravel; damp		7	D	G			0.1	
8	FILL: Medium stiff yellow brown silty sand, with trace gravel; damp		8						
9	FILL: Very loose yellow and tan, sand; damp		9	E	G	48		0.1	
10			10						
11	FILL: Very loose gray and tan sand; moist		11	F	G			0.1	
12			12						
13	Boring terminated at 12 feet bgs		13						
14			14						
15			15						
16			16						
17			17						
18			18						
19			19						
20			20						

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

APPENDIX C

LABORATORY ANALYTICAL REPORTS

APPENDIX C

LABORATORY ANALYTICAL REPORTS

MOBILE GEOCHEMISTRY

H&P

24 May 2007

Mr. Kevin McCartney
Bradburne, Briller & Johnson, LLC - Chicago
515 N. State Street, Suite 2200
Chicago, IL 60610
RE: BBJ051507-11

Enclosed are the results of analyses for samples received by the laboratory on 15-May-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

2470 Impala Drive, Carlsbad, California 92010 | 760.804.9678 — Fax 760.804.9159
3825 Industry Avenue, Lakewood, California 90712 | 562.426.6991 — Fax 562.426.6995
www.HandPmg.com | 1-800-834-9888

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG-16	E705046-01	Vapor	11-May-07	15-May-07
SG-17	E705046-02	Vapor	11-May-07	15-May-07
SG-18	E705046-03	Vapor	11-May-07	15-May-07

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-16 (E705046-01) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	20000	20	ppmv	2	EE71506	15-May-07	15-May-07	Modified EPA 8015B	
SG-17 (E705046-02) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	16000	20	ppmv	2	EE71506	15-May-07	15-May-07	Modified EPA 8015B	
SG-18 (E705046-03) Vapor Sampled: 11-May-07 Received: 15-May-07									
Methane	990	10	ppmv	1	EE71506	15-May-07	15-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-16 (E705046-01) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	1200	10	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	E
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	410	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	70	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	5.1	5.0	"	"	"	"	"	"	
2-Butanone	32	5.0	"	"	"	"	"	"	
n-Hexane	100	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	13	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	92	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	52	5.0	"	"	"	"	"	"	
n-Heptane	57	5.0	"	"	"	"	"	"	
Trichloroethene	13	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	38	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-16 (E705046-01) Vapor Sampled: 11-May-07 Received: 15-May-07									
2-Hexanone	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	67	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	9.1	5.0	"	"	"	"	"	"	
m,p-Xylene	14	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	6.0	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	7.3	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*80-120*		"	"	"	"	
SG-17 (E705046-02) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	990	10	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	E
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	49	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	140	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-17 (E705046-02) Vapor Sampled: 11-May-07 Received: 15-May-07									
Carbon disulfide	120	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	12	5.0	"	"	"	"	"	"	
2-Butanone	60	5.0	"	"	"	"	"	"	
n-Hexane	96	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	69	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	50	5.0	"	"	"	"	"	"	
n-Heptane	62	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	45	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	40	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	7.1	5.0	"	"	"	"	"	"	
m,p-Xylene	15	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	5.8	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253901	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-17 (E705046-02) Vapor Sampled: 11-May-07 Received: 15-May-07									
1,3,5-Trimethylbenzene	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
1,2,4-Trimethylbenzene	6.8	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	
SG-18 (E705046-03) Vapor Sampled: 11-May-07 Received: 15-May-07									
Propene	480	10	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	E
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	24	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	59	5.0	"	"	"	"	"	"	
n-Hexane	37	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-18 (E705046-03) Vapor Sampled: 11-May-07 Received: 15-May-07									
1,2-Dichloroethane	ND	5.0	ug/m³ Air	1	EE72302	22-May-07	22-May-07	EPA TO-15	
Benzene	61	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	23	5.0	"	"	"	"	"	"	
n-Heptane	19	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	7.9	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	32	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	27	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	200	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	6.4	5.0	"	"	"	"	"	"	
m,p-Xylene	17	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	7.1	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	12	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*98.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Methane by GC/FID - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE71506 - GC										
Blank (EE71506-BLK1)				Prepared & Analyzed: 15-May-07						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253901	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
Blank (EE72302-BLK1)				Prepared & Analyzed: 22-May-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ051507-11	
515 N. State Street, Suite 2200	Project Number: 0253901	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
Blank (EE72302-BLK1)				Prepared & Analyzed: 22-May-07						
4-Methyl-2-pentanone	ND	5.0	ug/m³ Air							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*110*		*"*	*103*		*107*	*80-120*			
Surrogate: Toluene-d8	*98.3*		*"*	*96.2*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*173*		*"*	*182*		*95.1*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
LCS (EE72302-BS1)				Prepared & Analyzed: 22-May-07						
Propene	36.3	10	ug/m³ Air	35.0		104	65-135			
Dichlorodifluoromethane	115	10	"	101		114	65-135			
Chloromethane	46.9	5.0	"	42.0		112	65-135			
Dichlorotetrafluoroethane	159	10	"	142		112	65-135			
Vinyl chloride	59.8	5.0	"	52.0		115	65-135			
Bromomethane	87.6	5.0	"	79.2		111	65-135			
Chloroethane	61.5	5.0	"	53.6		115	65-135			
Trichlorofluoromethane	141	5.0	"	113		125	65-135			
Acetone	57.5	20	"	48.4		119	65-135			
1,1-Dichloroethene	81.5	5.0	"	80.8		101	65-135			
1,1,2-Trichlorotrifluoroethane	143	10	"	155		92.3	65-135			
Methylene chloride	68.4	5.0	"	70.8		96.6	65-135			
Carbon disulfide	67.3	5.0	"	63.2		106	65-135			
trans-1,2-Dichloroethene	81.5	5.0	"	80.8		101	65-135			
Methyl tert-butyl ether	73.2	5.0	"	73.6		99.5	65-135			
Vinyl acetate	74.3	5.0	"	72.0		103	65-135			
1,1-Dichloroethane	81.5	5.0	"	82.4		98.9	65-135			
2-Butanone	64.0	5.0	"	60.0		107	65-135			
n-Hexane	76.7	5.0	"	72.0		107	65-135			
cis-1,2-Dichloroethene	78.8	5.0	"	80.0		98.5	65-135			
Ethyl acetate	53.2	5.0	"	73.6		72.3	65-135			
Chloroform	97.0	5.0	"	99.2		97.8	65-135			
Tetrahydrofuran	57.6	5.0	"	60.0		96.0	65-135			
1,1,1-Trichloroethane	105	5.0	"	111		94.6	65-135			
1,2-Dichloroethane	80.4	5.0	"	82.4		97.6	65-135			
Benzene	63.1	5.0	"	64.8		97.4	65-135			
Carbon tetrachloride	120	5.0	"	128		93.8	65-135			
Cyclohexane	73.7	5.0	"	70.4		105	65-135			
n-Heptane	85.1	5.0	"	83.6		102	65-135			
Trichloroethene	103	5.0	"	110		93.6	65-135			
1,2-Dichloropropane	90.5	5.0	"	94.4		95.9	65-135			
1,4-Dioxane	70.3	5.0	"	73.6		95.5	65-135			
Bromodichloromethane	126	5.5	"	137		92.0	65-135			
cis-1,3-Dichloropropene	80.5	5.0	"	92.4		87.1	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ051507-11 Project Number: 0253901 Project Manager: Mr. Kevin McCartney	Reported: 24-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72302 - TO-15										
LCS (EE72302-BS1)				Prepared & Analyzed: 22-May-07						
4-Methyl-2-pentanone	82.6	5.0	ug/m³ Air	83.2		99.3	65-135			
trans-1,3-Dichloropropene	79.1	5.0	"	92.4		85.6	65-135			
Toluene	69.4	5.0	"	76.8		90.4	65-135			
1,1,2-Trichloroethane	97.9	5.0	"	111		88.2	65-135			
2-Hexanone	77.6	5.0	"	83.2		93.3	65-135			
Dibromochloromethane	161	5.0	"	174		92.5	65-135			
Tetrachloroethene	115	5.0	"	138		83.3	65-135			
1,2-Dibromoethane (EDB)	128	5.0	"	157		81.5	65-135			
Chlorobenzene	76.5	5.0	"	93.6		81.7	65-135			
Ethylbenzene	71.8	5.0	"	88.4		81.2	65-135			
m,p-Xylene	141	5.0	"	177		79.7	65-135			
Styrene	64.7	5.0	"	86.8		74.5	65-135			
o-Xylene	67.4	5.0	"	88.4		76.2	65-135			
Bromoform	736	20	"	840		87.6	65-135			
1,1,2,2-Tetrachloroethane	83.6	5.0	"	140		59.7	65-135			QL-1L
4-Ethyltoluene	93.9	5.0	"	100		93.9	65-135			
1,3,5-Trimethylbenzene	68.6	5.0	"	100		68.6	65-135			
1,2,4-Trimethylbenzene	65.1	5.0	"	100		65.1	65-135			
1,3-Dichlorobenzene	73.1	10	"	122		59.9	65-135			QL-1L
Benzyl chloride	81.9	5.0	"	105		78.0	65-135			
1,4-Dichlorobenzene	68.6	10	"	122		56.2	65-135			QL-1L
1,2-Dichlorobenzene	61.7	10	"	122		50.6	65-135			QL-1L
1,2,4-Trichlorobenzene	39.6	10	"	151		26.2	65-135			QL-1L
Hexachlorobutadiene	81.2	10	"	218		37.2	65-135			QL-1L
Surrogate: 1,2-Dichloroethane-d4	*106*		*"*	*103*		*103*	*80-120*			
Surrogate: Toluene-d8	*98.2*		*"*	*96.2*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*189*		*"*	*182*		*104*	*80-120*			

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☑ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/11/2007
H&P Project # BBJ051507-11
Outside Lab:

Client: BB+J
Address: 515 N. State Street, Suite 2200
Chicago, IL 60610
Email: kmcartney@bbjgap.com Phone: 312-644-8556

Collector: Kevin McCartney
Client Project # PN7-0109
Location: Lyons, IL U253901, 0253801
Fax: 312-644-8555

Page: 1 of 1
Project Contact: Kevin McCartney
Turn around time: Normal

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:
Samples renamed per client's instructions. AK 5/24/07

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO2 ☐ O2 ☐ N2				Total # of containers
SG-1	→ SG-16		200	5/11/07	Vapor	400mL									✓				✓					
SG-2	→ SG-17		145												✓				✓					
SG-3	→ SG-18		135												✓				✓					
SG-4	→ CDSG-1		105												✓				✓					
SG-5	→ CDSG-2		120												✓				✓					
SG-6	→ CDSG-3		1245												✓				✓					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	BBJ	[signature] via UPS	H&P	5/15/07	10:30
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

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☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/11/2007
H&P Project # BBJ051507-11
Outside Lab:

Client: BB + J
Address: 515 N. State Street, Suite 2200
Chicago IL 60610
Email: kmcartney@bbjgroup.com Phone: 312-644-8556

Collector: Kevin McCartney
Client Project # PN7-0109
Location: Lyons, IL
Fax: 312-644-8555

Page: 1 of 1
Project Contact: Kevin McCartney
Turn around time: Normal

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:

DO NOT REPORT 1,3 BUTADIENE KM 5/16

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SG-1			200	5/11/07	Vapor	400mL									✓				✓					
SG-2			145												✓				✓					
SG-3			135												✓				✓					
SG-4			105												✓				✓					
SG-5			120												✓				✓					
SG-6			1245												✓				✓					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]	BBJ	[signature] via UPS	H&P	5/15/07	10:30
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

30 May 2007

Mr. Kevin McCartney
Bradburne, Briller & Johnson, LLC - Chicago
515 N. State Street, Suite 2200
Chicago, IL 60610
RE: BBJ052307-12

Enclosed are the results of analyses for samples received by the laboratory on 23-May-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

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3825 Industry Avenue, Lakewood, California 90712 | 562.426.6991 — Fax 562.426.6995
www.HandPmg.com | 1-800-834-9888

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SF-12 T=0	E705070-01	Vapor	21-May-07	23-May-07
SF-11 T=0	E705070-02	Vapor	21-May-07	23-May-07
SF-10 T=0	E705070-03	Vapor	21-May-07	23-May-07
SF-6 T=0	E705070-04	Vapor	21-May-07	23-May-07
SF-5 T=0	E705070-05	Vapor	21-May-07	23-May-07
SF-13 T=0	E705070-06	Vapor	21-May-07	23-May-07
SF-12	E705070-07	Vapor	22-May-07	23-May-07
SF-11	E705070-08	Vapor	22-May-07	23-May-07
SF-10	E705070-09	Vapor	22-May-07	23-May-07
SF-6	E705070-10	Vapor	22-May-07	23-May-07
SF-5	E705070-11	Vapor	22-May-07	23-May-07
SF-13	E705070-12	Vapor	22-May-07	23-May-07

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-12 T=0 (E705070-01) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-11 T=0 (E705070-02) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-10 T=0 (E705070-03) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-6 T=0 (E705070-04) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-5 T=0 (E705070-05) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-13 T=0 (E705070-06) Vapor Sampled: 21-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-12 (E705070-07) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-11 (E705070-08) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-10 (E705070-09) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-6 (E705070-10) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-5 (E705070-11) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	
SF-13 (E705070-12) Vapor Sampled: 22-May-07 Received: 23-May-07									
Methane	ND	10	ppmv	1	EE72405	24-May-07	24-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-12 (E705070-07) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	ND	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-12 (E705070-07) Vapor Sampled: 22-May-07 Received: 23-May-07									
2-Hexanone	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.9 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*81.9 %*	*80-120*		"	"	"	"	
SF-11 (E705070-08) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	ND	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	26	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-11 (E705070-08) Vapor Sampled: 22-May-07 Received: 23-May-07									
Carbon disulfide	7.4	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	43	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-11 (E705070-08) Vapor Sampled: 22-May-07 Received: 23-May-07									
1,3,5-Trimethylbenzene	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.9 %*	*80-120*		"	"	"	"	
SF-10 (E705070-09) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	12	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	11	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	6.4	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-10 (E705070-09) Vapor Sampled: 22-May-07 Received: 23-May-07									
1,2-Dichloroethane	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	11	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	14	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-6 (E705070-10) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	ND	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	37	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	5.6	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-6 (E705070-10) Vapor Sampled: 22-May-07 Received: 23-May-07									
2-Hexanone	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	9.3	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*81.9 %*	*80-120*		"	"	"	"	
SF-5 (E705070-11) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	16	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	7.8	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-5 (E705070-11) Vapor Sampled: 22-May-07 Received: 23-May-07									
Carbon disulfide	24	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	14	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-5 (E705070-11) Vapor Sampled: 22-May-07 Received: 23-May-07									
1,3,5-Trimethylbenzene	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.5 %*	*80-120*		"	"	"	"	
SF-13 (E705070-12) Vapor Sampled: 22-May-07 Received: 23-May-07									
Propene	ND	10	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	5.9	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-13 (E705070-12) Vapor Sampled: 22-May-07 Received: 23-May-07									
1,2-Dichloroethane	ND	5.0	ug/m³ Air	1	EE72501	24-May-07	24-May-07	EPA TO-15	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.5 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Methane by GC/FID - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72405 - GC										
Blank (EE72405-BLK1)				Prepared & Analyzed: 24-May-07						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72501 - TO-15										
Blank (EE72501-BLK1)				Prepared & Analyzed: 24-May-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72501 - TO-15										
Blank (EE72501-BLK1)				Prepared & Analyzed: 24-May-07						
4-Methyl-2-pentanone	ND	5.0	ug/m³ Air							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*110*		*"*	*103*		*107*	*80-120*			
Surrogate: Toluene-d8	*98.5*		*"*	*96.2*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*176*		*"*	*182*		*96.7*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72501 - TO-15										
LCS (EE72501-BS1)				Prepared & Analyzed: 24-May-07						
Propene	35.9	10	ug/m³ Air	35.0		103	65-135			
Dichlorodifluoromethane	114	10	"	101		113	65-135			
Chloromethane	47.0	5.0	"	42.0		112	65-135			
Dichlorotetrafluoroethane	156	10	"	142		110	65-135			
Vinyl chloride	56.3	5.0	"	52.0		108	65-135			
Bromomethane	70.9	5.0	"	79.2		89.5	65-135			
Chloroethane	53.9	5.0	"	53.6		101	65-135			
Trichlorofluoromethane	99.1	5.0	"	113		87.7	65-135			
Acetone	39.8	20	"	48.4		82.2	65-135			
1,1-Dichloroethene	72.2	5.0	"	80.8		89.4	65-135			
1,1,2-Trichlorotrifluoroethane	138	10	"	155		89.0	65-135			
Methylene chloride	66.3	5.0	"	70.8		93.6	65-135			
Carbon disulfide	66.2	5.0	"	63.2		105	65-135			
trans-1,2-Dichloroethene	79.2	5.0	"	80.8		98.0	65-135			
Methyl tert-butyl ether	70.5	5.0	"	73.6		95.8	65-135			
Vinyl acetate	72.3	5.0	"	72.0		100	65-135			
1,1-Dichloroethane	77.6	5.0	"	82.4		94.2	65-135			
2-Butanone	62.2	5.0	"	60.0		104	65-135			
n-Hexane	75.6	5.0	"	72.0		105	65-135			
cis-1,2-Dichloroethene	80.1	5.0	"	80.0		100	65-135			
Ethyl acetate	51.8	5.0	"	73.6		70.4	65-135			
Chloroform	96.5	5.0	"	99.2		97.3	65-135			
Tetrahydrofuran	57.0	5.0	"	60.0		95.0	65-135			
1,1,1-Trichloroethane	106	5.0	"	111		95.5	65-135			
1,2-Dichloroethane	78.0	5.0	"	82.4		94.7	65-135			
Benzene	61.1	5.0	"	64.8		94.3	65-135			
Carbon tetrachloride	124	5.0	"	128		96.9	65-135			
Cyclohexane	74.8	5.0	"	70.4		106	65-135			
n-Heptane	85.3	5.0	"	83.6		102	65-135			
Trichloroethene	99.6	5.0	"	110		90.5	65-135			
1,2-Dichloropropane	89.1	5.0	"	94.4		94.4	65-135			
1,4-Dioxane	66.5	5.0	"	73.6		90.4	65-135			
Bromodichloromethane	128	5.5	"	137		93.4	65-135			
cis-1,3-Dichloropropene	83.6	5.0	"	92.4		90.5	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72501 - TO-15										
LCS (EE72501-BS1)				Prepared & Analyzed: 24-May-07						
4-Methyl-2-pentanone	82.5	5.0	ug/m³ Air	83.2		99.2	65-135			
trans-1,3-Dichloropropene	82.0	5.0	"	92.4		88.7	65-135			
Toluene	68.4	5.0	"	76.8		89.1	65-135			
1,1,2-Trichloroethane	103	5.0	"	111		92.8	65-135			
2-Hexanone	62.2	5.0	"	83.2		74.8	65-135			
Dibromochloromethane	166	5.0	"	174		95.4	65-135			
Tetrachloroethene	122	5.0	"	138		88.4	65-135			
1,2-Dibromoethane (EDB)	131	5.0	"	157		83.4	65-135			
Chlorobenzene	78.9	5.0	"	93.6		84.3	65-135			
Ethylbenzene	74.0	5.0	"	88.4		83.7	65-135			
m,p-Xylene	146	5.0	"	177		82.5	65-135			
Styrene	66.3	5.0	"	86.8		76.4	65-135			
o-Xylene	68.6	5.0	"	88.4		77.6	65-135			
Bromoform	789	20	"	840		93.9	65-135			
1,1,2,2-Tetrachloroethane	84.7	5.0	"	140		60.5	65-135			QL-1L
4-Ethyltoluene	94.7	5.0	"	100		94.7	65-135			
1,3,5-Trimethylbenzene	71.0	5.0	"	100		71.0	65-135			
1,2,4-Trimethylbenzene	67.8	5.0	"	100		67.8	65-135			
1,3-Dichlorobenzene	71.3	10	"	122		58.4	65-135			QL-1L
Benzyl chloride	84.7	5.0	"	105		80.7	65-135			
1,4-Dichlorobenzene	66.7	10	"	122		54.7	65-135			QL-1L
1,2-Dichlorobenzene	65.3	10	"	122		53.5	65-135			QL-1L
1,2,4-Trichlorobenzene	38.6	10	"	151		25.6	65-135			QL-1L
Hexachlorobutadiene	59.3	10	"	218		27.2	65-135			QL-1L
Surrogate: 1,2-Dichloroethane-d4	*104*		*"*	*103*		*101*	*80-120*			
Surrogate: Toluene-d8	*96.9*		*"*	*96.2*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*184*		*"*	*182*		*101*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052307-12 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 30-May-07

Notes and Definitions

QL-1L	The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/22/07
H&P Project # BBJ052307-12
Outside Lab:

Client: Bradburne, Baller + Johnson
Address: 515 N State Street, Suite 2200
Chicago, IL 60610
Email: kmccartney@bbjgroup.com Phone: 312-644-8556

Collector: Michele Hargraves
Page: 1 of 2
Client Project # 0253901
Project Contact: Kevin McCartney
Location: Lyons, IL
Fax: 312-644-8655
Turn around time:

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☐ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No
N/A (Received on Site)

Special Instructions:
Please don't report 1,3-Butadiene per Blayne do not run T=0

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☒ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SF-12 T=0			3:45 pm	5/21	air	Summa									X			X	X					
SF-11 T=0			3:50 pm	5/21	air	Summa									X				X					
SF-10 T=0			4:00 pm	5/21	air	Summa									X				X					
SF-6 T=0			4:10 pm	5/21	air	Summa									X				X					
SF-5 T=0			4:20 pm	5/21	air	Summa									X				X					
SF-13 T=0			4:30 pm	5/21	air	Summa									X				X					
SF-12			5:35 am	5/22	air	Summa									X				X					
SF-11			6:40 am	5/22	air	Summa									X				X					
SF-10			6:45 am	5/22	air	Summa									X				X					
SF-6			6:50 am	5/22	air	Summa									X				X					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele L Hargraves	BBJ	via UPS	H&P	5/23/07	10:20am
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/22/07
H&P Project # BB5052307-12
Outside Lab:

Client: Bradburne, Briller + Johnson
Address: 515 N. State Street, Suite 2200
Chicago, IL 60610
Email: kmccartney@bbjgroup.com Phone: 312-644-8556

Collector: Michele Hargreaves
Page: 2 of 2
Client Project # 0253901
Project Contact: Kevin McCartney
Location: Lyons, IL
Fax: 312-644-8555
Turn around time:

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☐ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No
N/A (Received on Site)

Special Instructions:
Please don't report 1,3-Butadiene

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SF-5			6 am	5/22	air	Summa									X				X					
SF-13			6:10 am	5/22	air	summa									X				X					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele Hargreaves	BB+J	via UPS	H&P	5/23/07	12:20pm
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

08 June 2007

Mr. Kevin McCartney
Bradburne, Briller & Johnson, LLC - Chicago
515 N. State Street, Suite 2200
Chicago, IL 60610
RE: BBJ052907-10

Enclosed are the results of analyses for samples received by the laboratory on 29-May-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

J Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

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3825 Industry Avenue, Lakewood, California 90712 — 562.426.6991 — Fax 562.426.6995
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MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SF-1 t=0	E705084-01	Vapor	24-May-07	29-May-07
SF-7 t=0	E705084-02	Vapor	24-May-07	29-May-07
SF-3 t=0	E705084-03	Vapor	24-May-07	29-May-07
SF-4 t=0	E705084-04	Vapor	24-May-07	29-May-07
SF-2 t=0	E705084-05	Vapor	24-May-07	29-May-07
SF-8 t=0	E705084-06	Vapor	24-May-07	29-May-07
SF-1	E705084-07	Vapor	25-May-07	29-May-07
SF-7	E705084-08	Vapor	25-May-07	29-May-07
SF-3	E705084-09	Vapor	25-May-07	29-May-07
SF-4	E705084-10	Vapor	25-May-07	29-May-07
SF-2	E705084-11	Vapor	25-May-07	29-May-07
SF-8	E705084-12	Vapor	25-May-07	29-May-07
SF-9 t=0	E705084-13	Vapor	25-May-07	29-May-07
SF-9	E705084-14	Vapor	26-May-07	29-May-07

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-1 t=0 (E705084-01) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-7 t=0 (E705084-02) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-3 t=0 (E705084-03) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-4 t=0 (E705084-04) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-2 t=0 (E705084-05) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-8 t=0 (E705084-06) Vapor Sampled: 24-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-1 (E705084-07) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-7 (E705084-08) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-3 (E705084-09) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-4 (E705084-10) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-2 (E705084-11) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-8 (E705084-12) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-9 t=0 (E705084-13) Vapor Sampled: 25-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	
SF-9 (E705084-14) Vapor Sampled: 26-May-07 Received: 29-May-07									
Methane	ND	10	ppmv	1	EE72906	29-May-07	29-May-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-3 t=0 (E705084-03) Vapor Sampled: 24-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EF70604	05-Jun-07	05-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	37	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	11	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-3 t=0 (E705084-03) Vapor Sampled: 24-May-07 Received: 29-May-07									
2-Hexanone	ND	10	ug/m³ Air	1	EF70604	05-Jun-07	05-Jun-07	EPA TO-15	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*96.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.8 %*	*80-120*		"	"	"	"	
SF-1 (E705084-07) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-1 (E705084-07) Vapor Sampled: 25-May-07 Received: 29-May-07									
1,1,2-Trichlorotrifluoroethane	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	14	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	18	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-1 (E705084-07) Vapor Sampled: 25-May-07 Received: 29-May-07									
Styrene	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	
SF-7 (E705084-08) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-7 (E705084-08) Vapor Sampled: 25-May-07 Received: 29-May-07									
2-Butanone	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	14	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-7 (E705084-08) Vapor Sampled: 25-May-07 Received: 29-May-07									
1,3-Dichlorobenzene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.3 %*	*80-120*		"	"	"	"	
SF-3 (E705084-09) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	51	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	5.7	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-3 (E705084-09) Vapor Sampled: 25-May-07 Received: 29-May-07									
Ethyl tert-butyl ether	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	13	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	970	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-3 (E705084-09) Vapor Sampled: 25-May-07 Received: 29-May-07									
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*80-120*	*EE73103*	*30-May-07*	*30-May-07*	*EPA TO-15*	
Surrogate: Toluene-d8		*99.1 %*		*80-120*	*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*80.2 %*		*80-120*	*"*	*"*	*"*	*"*	
SF-4 (E705084-10) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	36	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	7.0	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	12	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-4 (E705084-10) Vapor Sampled: 25-May-07 Received: 29-May-07									
n-Heptane	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	75	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	10	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*100 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*104 %*	*80-120*		*"*	*"*	*"*	*"*	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-2 (E705084-11) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-2 (E705084-11) Vapor Sampled: 25-May-07 Received: 29-May-07									
cis-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*98.1 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-8 (E705084-12) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	21	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-8 (E705084-12) Vapor Sampled: 25-May-07 Received: 29-May-07									
cis-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	6.2	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.1 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-9 t=0 (E705084-13) Vapor Sampled: 25-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EF70604	05-Jun-07	05-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	78	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	9.6	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-9 t=0 (E705084-13) Vapor Sampled: 25-May-07 Received: 29-May-07									
cis-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EF70604	05-Jun-07	05-Jun-07	EPA TO-15	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	8.8	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	5.4	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.6 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-9 (E705084-14) Vapor Sampled: 26-May-07 Received: 29-May-07									
Propene	ND	10	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	6.8	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
Isopropyl alcohol	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	29	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	11	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	9.8	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	100	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	6.5	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	5.0	"	"	"	"	"	"	
n-Heptane	13	5.0	"	"	"	"	"	"	
Trichloroethene	35	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SF-9 (E705084-14) Vapor Sampled: 26-May-07 Received: 29-May-07									
cis-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EE73103	30-May-07	30-May-07	EPA TO-15	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	6.8	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	6.4	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	6.3	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	6.4	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.6 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Methane by GC/FID - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE72906 - GC										
Blank (EE72906-BLK1)				Prepared & Analyzed: 29-May-07						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE73103 - TO-15										
Blank (EE73103-BLK1)				Prepared & Analyzed: 30-May-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE73103 - TO-15										
Blank (EE73103-BLK1)				Prepared & Analyzed: 30-May-07						
4-Methyl-2-pentanone	ND	5.0	ug/m³ Air							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*99.4*		*"*	*103*		*96.5*	*80-120*			
Surrogate: Toluene-d8	*97.6*		*"*	*96.2*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*162*		*"*	*182*		*89.0*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE73103 - TO-15										
LCS (EE73103-BS1)				Prepared & Analyzed: 30-May-07						
Propene	32.3	10	ug/m³ Air	35.0		92.3	65-135			
Dichlorodifluoromethane	104	10	"	101		103	65-135			
Chloromethane	42.7	5.0	"	42.0		102	65-135			
Dichlorotetrafluoroethane	146	10	"	142		103	65-135			
Vinyl chloride	53.5	5.0	"	52.0		103	65-135			
Bromomethane	72.4	5.0	"	79.2		91.4	65-135			
Chloroethane	52.9	5.0	"	53.6		98.7	65-135			
Trichlorofluoromethane	95.4	5.0	"	113		84.4	65-135			
Acetone	40.4	20	"	48.4		83.5	65-135			
1,1-Dichloroethene	70.6	5.0	"	80.8		87.4	65-135			
1,1,2-Trichlorotrifluoroethane	140	10	"	155		90.3	65-135			
Methylene chloride	65.9	5.0	"	70.8		93.1	65-135			
Carbon disulfide	68.3	5.0	"	63.2		108	65-135			
trans-1,2-Dichloroethene	77.8	5.0	"	80.8		96.3	65-135			
Methyl tert-butyl ether	70.1	5.0	"	73.6		95.2	65-135			
Vinyl acetate	67.5	5.0	"	72.0		93.8	65-135			
1,1-Dichloroethane	77.7	5.0	"	82.4		94.3	65-135			
2-Butanone	59.2	5.0	"	60.0		98.7	65-135			
n-Hexane	73.3	5.0	"	72.0		102	65-135			
cis-1,2-Dichloroethene	76.7	5.0	"	80.0		95.9	65-135			
Ethyl acetate	50.2	5.0	"	73.6		68.2	65-135			
Chloroform	93.5	5.0	"	99.2		94.3	65-135			
Tetrahydrofuran	58.5	5.0	"	60.0		97.5	65-135			
1,1,1-Trichloroethane	104	5.0	"	111		93.7	65-135			
1,2-Dichloroethane	75.0	5.0	"	82.4		91.0	65-135			
Benzene	61.2	5.0	"	64.8		94.4	65-135			
Carbon tetrachloride	124	5.0	"	128		96.9	65-135			
Cyclohexane	72.3	5.0	"	70.4		103	65-135			
n-Heptane	81.3	5.0	"	83.6		97.2	65-135			
Trichloroethene	97.9	5.0	"	110		89.0	65-135			
1,2-Dichloropropane	86.9	5.0	"	94.4		92.1	65-135			
1,4-Dioxane	68.6	5.0	"	73.6		93.2	65-135			
Bromodichloromethane	121	5.5	"	137		88.3	65-135			
cis-1,3-Dichloropropene	79.2	5.0	"	92.4		85.7	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE73103 - TO-15										
LCS (EE73103-BS1)				Prepared & Analyzed: 30-May-07						
4-Methyl-2-pentanone	76.2	5.0	ug/m³ Air	83.2		91.6	65-135			
trans-1,3-Dichloropropene	76.4	5.0	"	92.4		82.7	65-135			
Toluene	67.7	5.0	"	76.8		88.2	65-135			
1,1,2-Trichloroethane	98.2	5.0	"	111		88.5	65-135			
2-Hexanone	70.9	5.0	"	83.2		85.2	65-135			
Dibromochloromethane	162	5.0	"	174		93.1	65-135			
Tetrachloroethene	119	5.0	"	138		86.2	65-135			
1,2-Dibromoethane (EDB)	130	5.0	"	157		82.8	65-135			
Chlorobenzene	80.0	5.0	"	93.6		85.5	65-135			
Ethylbenzene	75.1	5.0	"	88.4		85.0	65-135			
m,p-Xylene	142	5.0	"	177		80.2	65-135			
Styrene	68.4	5.0	"	86.8		78.8	65-135			
o-Xylene	68.7	5.0	"	88.4		77.7	65-135			
Bromoform	785	20	"	840		93.5	65-135			
1,1,2,2-Tetrachloroethane	86.3	5.0	"	140		61.6	65-135			QL-1L
4-Ethyltoluene	98.9	5.0	"	100		98.9	65-135			
1,3,5-Trimethylbenzene	67.2	5.0	"	100		67.2	65-135			
1,2,4-Trimethylbenzene	67.3	5.0	"	100		67.3	65-135			
1,3-Dichlorobenzene	72.4	10	"	122		59.3	65-135			QL-1L
Benzyl chloride	89.7	5.0	"	105		85.4	65-135			
1,4-Dichlorobenzene	71.9	10	"	122		58.9	65-135			QL-1L
1,2-Dichlorobenzene	66.4	10	"	122		54.4	65-135			QL-1L
1,2,4-Trichlorobenzene	43.1	10	"	151		28.5	65-135			QL-1L
Hexachlorobutadiene	82.5	10	"	218		37.8	65-135			QL-1L
Surrogate: 1,2-Dichloroethane-d4	*100*		*"*	*103*		*97.1*	*80-120*			
Surrogate: Toluene-d8	*91.7*		*"*	*96.2*		*95.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*199*		*"*	*182*		*109*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF70604 - TO-15										
Blank (EF70604-BLK2)				Prepared & Analyzed: 05-Jun-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							
cis-1,3-Dichloropropene	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF70604 - TO-15										
Blank (EF70604-BLK2)				Prepared & Analyzed: 05-Jun-07						
4-Methyl-2-pentanone	ND	5.0	ug/m³ Air							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	10	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*101*		*"*	*103*		*98.1*	*80-120*			
Surrogate: Toluene-d8	*91.5*		*"*	*96.2*		*95.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*172*		*"*	*182*		*94.5*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF70604 - TO-15										
LCS (EF70604-BS1)				Prepared & Analyzed: 05-Jun-07						
Propene	33.1	10	ug/m³ Air	35.0		94.6	65-135			
Dichlorodifluoromethane	102	10	"	101		101	65-135			
Chloromethane	41.9	5.0	"	42.0		99.8	65-135			
Dichlorotetrafluoroethane	143	10	"	142		101	65-135			
Vinyl chloride	51.1	5.0	"	52.0		98.3	65-135			
Bromomethane	87.1	5.0	"	79.2		110	65-135			
Chloroethane	57.9	5.0	"	53.6		108	65-135			
Trichlorofluoromethane	119	5.0	"	113		105	65-135			
Acetone	57.5	20	"	48.4		119	65-135			
1,1-Dichloroethene	75.1	5.0	"	80.8		92.9	65-135			
1,1,2-Trichlorotrifluoroethane	145	10	"	155		93.5	65-135			
Methylene chloride	66.0	5.0	"	70.8		93.2	65-135			
Carbon disulfide	65.5	5.0	"	63.2		104	65-135			
trans-1,2-Dichloroethene	77.4	5.0	"	80.8		95.8	65-135			
Methyl tert-butyl ether	70.2	5.0	"	73.6		95.4	65-135			
Vinyl acetate	79.9	5.0	"	72.0		111	65-135			
1,1-Dichloroethane	77.2	5.0	"	82.4		93.7	65-135			
2-Butanone	57.2	5.0	"	60.0		95.3	65-135			
n-Hexane	74.0	5.0	"	72.0		103	65-135			
cis-1,2-Dichloroethene	75.6	5.0	"	80.0		94.5	65-135			
Ethyl acetate	52.2	5.0	"	73.6		70.9	65-135			
Chloroform	94.7	5.0	"	99.2		95.5	65-135			
Tetrahydrofuran	59.9	5.0	"	60.0		99.8	65-135			
1,1,1-Trichloroethane	105	5.0	"	111		94.6	65-135			
1,2-Dichloroethane	76.1	5.0	"	82.4		92.4	65-135			
Benzene	61.5	5.0	"	64.8		94.9	65-135			
Carbon tetrachloride	121	5.0	"	128		94.5	65-135			
Cyclohexane	71.1	5.0	"	70.4		101	65-135			
n-Heptane	85.0	5.0	"	83.6		102	65-135			
Trichloroethene	106	5.0	"	110		96.4	65-135			
1,2-Dichloropropane	90.2	5.0	"	94.4		95.6	65-135			
1,4-Dioxane	73.1	5.0	"	73.6		99.3	65-135			
Bromodichloromethane	134	5.0	"	137		97.8	65-135			
cis-1,3-Dichloropropene	87.2	5.0	"	92.4		94.4	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF70604 - TO-15										
LCS (EF70604-BS1)				Prepared & Analyzed: 05-Jun-07						
4-Methyl-2-pentanone	82.2	5.0	ug/m³ Air	83.2		98.8	65-135			
trans-1,3-Dichloropropene	81.8	5.0	"	92.4		88.5	65-135			
Toluene	73.4	5.0	"	76.8		95.6	65-135			
1,1,2-Trichloroethane	102	5.0	"	111		91.9	65-135			
2-Hexanone	79.4	10	"	83.2		95.4	65-135			
Dibromochloromethane	177	5.0	"	174		102	65-135			
Tetrachloroethene	130	5.0	"	138		94.2	65-135			
1,2-Dibromoethane (EDB)	138	5.0	"	157		87.9	65-135			
Chlorobenzene	82.0	5.0	"	93.6		87.6	65-135			
Ethylbenzene	79.7	5.0	"	88.4		90.2	65-135			
m,p-Xylene	158	5.0	"	177		89.3	65-135			
Styrene	70.7	5.0	"	86.8		81.5	65-135			
o-Xylene	75.5	5.0	"	88.4		85.4	65-135			
Bromoform	932	20	"	840		111	65-135			
1,1,2,2-Tetrachloroethane	89.7	5.0	"	140		64.1	65-135			QL-1L
4-Ethyltoluene	101	5.0	"	100		101	65-135			
1,3,5-Trimethylbenzene	71.0	5.0	"	100		71.0	65-135			
1,2,4-Trimethylbenzene	71.3	5.0	"	100		71.3	65-135			
1,3-Dichlorobenzene	77.0	10	"	122		63.1	65-135			QL-1L
Benzyl chloride	93.4	5.0	"	105		89.0	65-135			
1,4-Dichlorobenzene	70.3	10	"	122		57.6	65-135			QL-1L
1,2-Dichlorobenzene	66.6	10	"	122		54.6	65-135			QL-1L
1,2,4-Trichlorobenzene	41.7	10	"	151		27.6	65-135			QL-1L
Hexachlorobutadiene	106	10	"	218		48.6	65-135			QL-1L
Surrogate: 1,2-Dichloroethane-d4	*99.5*		*"*	*103*		*96.6*	*80-120*			
Surrogate: Toluene-d8	*95.2*		*"*	*96.2*		*99.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*180*		*"*	*182*		*98.9*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ052907-10 Project Number: 0253901 / Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 08-Jun-07

Notes and Definitions

QL-1L	The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159

☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/26/07

H&P Project # BBJ052907-10

Outside Lab:

Client: Bradburne, Briller & Johnson

Address: 515 N. State Street, Suite 2200
Chicago, IL 60610

Email: ~~kmccart~~ kmccartney@bbjgroup.com Phone: 312-644-8556

Collector: Michele Hargreaves

Page: 1 of 2

Client Project # 0253901

Project Contact: Kevin McCartney

Location: Lyons, IL

Fax: 312-644-8555

Turn around time:

EDF: Yes ☐ No ☐

Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:

Please don't report 1,3-Butadiene
Hold t=0 samples for TO-15 per Blayne Hartman.
Run SF3 t=0 and SF-9 t=0 per Blayne Hartman. AK

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SF-1 t=0			4:05 pm	5/24	air	Summa									X				X					
SF-7 t=0			4:10 pm	5/24	air	Summa									X				X					
SF-3 t=0			4:20 pm	5/24	air	Summa									X				X					
SF-4 t=0			4:25 pm	5/24	air	Summa									X				X					
SF-2 t=0			4:30 pm	5/24	air	Summa									X				X					
SF-8 t=0			4:35 pm	5/24	air	Summa									X				X					
SF-1			5:20 am	5/25	air	Summa									X				X					
SF-7			5:25 am	5/25	air	Summa									X				X					
SF-3			5:30 am	5/25	air	Summa									X				X					
SF-4			5:35 am	5/25	air	Summa									X				X					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele L Hargreaves	BB+J	[signature] via UPS	H+P	5/29/07	10:10am

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 5/26/07
H&P Project # BBJ052907-10
Outside Lab:

Client: Bradbourne, Baller + Johnson
Address: 515 N. State Street, Suite 2200
Chicago, IL 60610
Email: kmccartney@bbjgroup.com Phone: 312-644-8556

Collector: Michele Hargreaves
Page: 2 of 2
Client Project # 0253901
Project Contact: Kevin McCartney
Location: Lyons, IL
Fax: 312-644-8665
Turn around time:

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:

Please don't report 1,3-Butadiene

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
SF-2			5:40 am	5/25	air	Summa									X				X					
SF-8			5:45 am	5/25	air	Summa									X				X					
SF-9 t=0			3:40 pm	5/25	air	Summa									X				X					
SF-9			5:30 am	5/26	air	Summa									X				X					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele Hargreaves	BBJ	[illegible] via UPS	H&P	5/09/07	10:40am
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

May 22, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons, IL
First Environmental File ID: 7-2097
Date Received: May 11, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, IL**

First Environmental File ID: **7-2097**

Date Received: **May 11, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-1 (0'-2')
Sample No: 7-2097-001

Date Collected: 05/11/07
Time Collected: 14:05
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/14/07				
Total Solids	93.02		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/18/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-1 (0'-2')
Sample No: 7-2097-001

Date Collected: 05/11/07
Time Collected: 14:05
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/18/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/15/07		
Acenaphthene	338	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	3,520	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	2,630	330	ug/kg	
Benzo(a)pyrene	2,720	90	ug/kg	
Benzo(b)fluoranthene	3,330	330	ug/kg	
Benzo(k)fluoranthene	2,070	330	ug/kg	
Benzo(ghi)perylene	1,310	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	841	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	3,980	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	568	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-1 (0'-2')
Sample No: 7-2097-001

Date Collected: 05/11/07
Time Collected: 14:05
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/15/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	3,480	330	ug/kg	
Fluorene	478	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	1,380	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	362	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	1,770	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	4,210	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-1 (0'-2')
Sample No: 7-2097-001

Date Collected: 05/11/07
Time Collected: 14:05
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/20/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/15/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/18/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/17/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-1 (0'-2')
Sample No: 7-2097-001

Date Collected: 05/11/07
Time Collected: 14:05
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/21/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/15/07		
Arsenic		3.1	0.2	mg/kg	
Barium		28.3	0.1	mg/kg	
Cadmium		0.6	0.1	mg/kg	
Chromium		9.9	0.1	mg/kg	
Lead		35.4	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/15/07					
Mercury		0.10	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/14/07					
pH @ 25°C, 1:10		8.61		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-2 (4'-6')
Sample No: 7-2097-002

Date Collected: 05/11/07
Time Collected: 13:55
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/14/07				
Total Solids	80.88		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/18/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-2 (4'-6')
Sample No: 7-2097-002

Date Collected: 05/11/07
Time Collected: 13:55
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/18/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/15/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-2 (4'-6')
Sample No: 7-2097-002

Date Collected: 05/11/07
Time Collected: 13:55
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/20/07		**Preparation Method 3540C** Preparation Date: 05/15/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-2 (4'-6')
Sample No: 7-2097-002

Date Collected: 05/11/07
Time Collected: 13:55
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 05/20/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 05/15/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 05/21/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-2 (4'-6')
Sample No: 7-2097-002

Date Collected: 05/11/07
Time Collected: 13:55
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/21/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/15/07		
Arsenic		8.2	0.2	mg/kg	
Barium		125	0.1	mg/kg	
Cadmium		0.6	0.1	mg/kg	
Chromium		27.8	0.1	mg/kg	
Lead		21.5	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/15/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/14/07					
pH @ 25°C, 1:10		8.21		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-3 (4'-6')
Sample No: 7-2097-003

Date Collected: 05/11/07
Time Collected: 13:45
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 05/14/07				
Total Solids	83.79		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/18/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-3 (4'-6')
Sample No: 7-2097-003

Date Collected: 05/11/07
Time Collected: 13:45
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/18/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/15/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-3 (4'-6')
Sample No: 7-2097-003

Date Collected: 05/11/07
Time Collected: 13:45
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/20/07		**Preparation Method 3540C** Preparation Date: 05/15/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-3 (4'-6')
Sample No: 7-2097-003

Date Collected: 05/11/07
Time Collected: 13:45
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 05/20/07		Preparation Date: 05/15/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 05/21/07		Preparation Date: 05/18/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: GP-3 (4'-6')
Sample No: 7-2097-003

Date Collected: 05/11/07
Time Collected: 13:45
Date Received: 05/11/07
Date Reported: 05/22/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 05/21/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 05/18/07			Preparation Date: 05/15/07		
Arsenic		7.0	0.2	mg/kg	
Barium		85.6	0.1	mg/kg	
Cadmium		0.7	0.1	mg/kg	
Chromium		17.4	0.1	mg/kg	
Lead		22.0	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 05/15/07					
Mercury		0.11	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 05/14/07					
pH @ 25°C, 1:10		7.65		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/11/07
Project ID:	Lyons, IL	**Time Collected:**	12:00
Sample ID:	Equipment Rinse	**Date Received:**	05/11/07
Sample No:	7-2097-004	**Date Reported:**	05/22/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/16/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/11/07
Project ID:	Lyons, IL	**Time Collected:**	12:00
Sample ID:	Equipment Rinse	**Date Received:**	05/11/07
Sample No:	7-2097-004	**Date Reported:**	05/22/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 05/19/07		Preparation Date: 05/16/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 10	10	ug/L	
Benzidine	< 10	10	ug/L	
Benzo(a)anthracene	< 10	10	ug/L	
Benzo(a)pyrene	< 10	10	ug/L	
Benzo(b)fluoranthene	< 10	10	ug/L	
Benzo(k)fluoranthene	< 10	10	ug/L	
Benzo(ghi)perylene	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Chrysene	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Dibenzo(a,h)anthracene	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
3,3'-Dichlorobenzidine	< 20	20	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/11/07
Project ID:	Lyons, IL	**Time Collected:**	12:00
Sample ID:	Equipment Rinse	**Date Received:**	05/11/07
Sample No:	7-2097-004	**Date Reported:**	05/22/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 05/19/07		**Preparation Method 3510C** Preparation Date: 05/16/07		
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Fluoranthene	< 10	10	ug/L	
Fluorene	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Indeno(1,2,3-cd)pyrene	< 10	10	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	
3 & 4-Methylphenol	< 10	10	ug/L	
Naphthalene	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenanthrene	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
Pyrene	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, IL
Sample ID: Equipment Rinse
Sample No: 7-2097-004

Date Collected: 05/11/07
Time Collected: 12:00
Date Received: 05/11/07
Date Reported: 05/22/07

Analyte		Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**		**Preparation Method 3510C**		
Analysis Date: 05/21/07			Preparation Date: 05/16/07		
Aldrin		< 0.05	0.05	ug/L	
Aroclor 1016		< 0.50	0.50	ug/L	
Aroclor 1221		< 0.50	0.50	ug/L	
Aroclor 1232		< 0.50	0.50	ug/L	
Aroclor 1242		< 0.50	0.50	ug/L	
Aroclor 1248		< 0.50	0.50	ug/L	
Aroclor 1254		< 0.50	0.50	ug/L	
Aroclor 1260		< 0.50	0.50	ug/L	
alpha-BHC		< 0.05	0.05	ug/L	
beta-BHC		< 0.05	0.05	ug/L	
delta-BHC		< 0.05	0.05	ug/L	
gamma-BHC (Lindane)		< 0.05	0.05	ug/L	
alpha-Chlordane		< 0.50	0.50	ug/L	
gamma-Chlordane		< 0.50	0.50	ug/L	
4,4'-DDD		< 0.10	0.10	ug/L	
4,4'-DDE		< 0.10	0.10	ug/L	
4,4'-DDT		< 0.10	0.10	ug/L	
Dieldrin		< 0.10	0.10	ug/L	
Endosulfan I		< 0.05	0.05	ug/L	
Endosulfan II		< 0.10	0.10	ug/L	
Endosulfan sulfate		< 0.10	0.10	ug/L	
Endrin		< 0.10	0.10	ug/L	
Endrin aldehyde		< 0.10	0.10	ug/L	
Endrin ketone		< 0.10	0.10	ug/L	
Heptachlor		< 0.05	0.05	ug/L	
Heptachlor epoxide		< 0.05	0.05	ug/L	
Methoxychlor		< 0.50	0.50	ug/L	
Toxaphene		< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**				
Analysis Date: 05/17/07					
2,4-D		< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)		< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**				
Analysis Date: 05/15/07					
Mercury		< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/11/07
Project ID:	Lyons, IL	**Time Collected:**	12:00
Sample ID:	Equipment Rinse	**Date Received:**	05/11/07
Sample No:	7-2097-004	**Date Reported:**	05/22/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 05/16/07		Preparation Date: 05/14/07		
Arsenic	< 0.002	0.002	mg/L	
Barium	0.002	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	< 0.001	0.001	mg/L	
Lead	< 0.002	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	< 0.001	0.001	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	05/11/07
Project ID:	Lyons, IL	**Time Collected:**	0:00
Sample ID:	Trip Blank	**Date Received:**	05/11/07
Sample No:	7-2097-005	**Date Reported:**	05/22/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 05/16/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

Page____ of ____ pgs

First Environmental Laboratories, Inc.

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Company Name: BBJ
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Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☑
Sampled By: Kevin McCartney

Project I.D.: Lyons, IL
P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOCs-8260B	SVOCs-8270C	PCBs-8082	RCRA metals-6010B/7470A	Herbicides 8151	~~Organochlorine Pesticides 8081A~~	Organochlorine Pesticides 8081A	pH 9040B/9045C	Comments	Lab I.D.
5-11-07/205	GP-1 [0'-2']	S	✓	✓	✓	✓	✓		✓	✓		7-2097-001
5-11-07/155	GP-2 [4'-6']	S	✓	✓	✓	✓	✓		✓	✓		002
5-11-07/145	GP-3 [4'-6']	S	✓	✓	✓	✓	✓		✓	✓		003
5-11-07/1200	Equipment Rinse	W	✓	✓	✓	✓	✓		✓			004
	Trip Blank	W	✓									005

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☑ Yes ☐ No

Notes and Special Instructions: _____

Relinquished By: [signature] Date/Time 5/11/07 3:50 Received By: [signature] Date/Time 5/11/07 3:50
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 4/06

APPENDIX J

BB&J PHASE II ESA: COMMUNITY CENTER

June 26, 2007

Village of Lyons c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago, Illinois 60603

Subject: **Report of Phase II Environmental Site Assessment Strategy and Sampling - Community Center Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois BB&J Project No. 0254601**

Dear Mr. Bush:

Bradburne, Briller & Johnson, LLC (BB&J) is pleased to submit to the Village of Lyons this *Report of Phase II Environmental Site Assessment* for the parcel of land located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property). This project was performed in accordance with the scope of work outlined in BB&J Proposal No. PN7-0136.

We appreciate the opportunity to provide you with our environmental consulting services. If you have any questions or require additional information, please call.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

Michele Hargreaves
Staff Scientist

Andy Bajorat, CHMM
Senior Scientist

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REPORT OF
PHASE II ENVIRONMENTAL SITE ASSESSMENT

Strategy and Sampling - Community Center
Southwest Corner of Ogden and Lawndale Avenues
Lyons, Illinois

Submitted to:

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
Chicago, Illinois

Prepared by:

BRADBURNE, BRILLER & JOHNSON, LLC
Chicago, Illinois

June 26, 2007

TABLE OF CONTENTS

1.0 BACKGROUND 1

2.0 OBJECTIVE 1

3.0 SUBSURFACE ASSESSMENT 1
- 3.1 Pre-Mobilization Activities 1
- 3.2 Subsurface Soil Investigation 1
- 3.3 Ground-Water Investigation 3
- 3.4 Soil Gas Survey 4
- 3.5 Limited Flux Chamber Survey 5

4.0 FINDINGS AND ANALYTICAL RESULTS 6
- 4.1 Subsurface Geology and Hydrogeology 6
- 4.2 Field Screening Results 6
- 4.3 Laboratory Analytical Results 7
  - 4.3.1 Soil Investigation 7
  - 4.3.2 Ground Water 9
  - 4.3.3 Soil Gas 10
  - 4.3.4 Flux Chamber Results 11
  - 4.3.5 QA/QC 11

5.0 CONCLUSIONS AND RECOMMENDATIONS 11
- 5.1 Subsurface Soil Investigation 11
- 5.2 Ground Water 12
- 5.3 Soil Gas Survey 13
  - 5.3.1 Johnson and Ettinger Calculations 13
  - 5.3.2 Soil Gas Conclusions 15
  - 5.3.3 Soil Gas Recommendations 15
- 5.4 Soil Flux Survey 17

TABLE OF CONTENTS (continued)

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results
Table 2: Summary of Soil Laboratory Analytical Results
Table 3: Summary of Ground-Water Analytical Results
Table 4: Summary of Flux Chamber Laboratory Analytical Results
Table 5: Monitoring Well Construction and Development Data
Table 6: Monitoring Well and Ground-Water Elevation Data

FIGURES

Figure 1: Site Location Map
Figure 2: Soil Boring, Monitoring Wells, Soil Gas, and Soil Flux Chamber Locations
Figure 3: Ground-water Potentiometric Map
Figure 4: Monitoring Well Diagrams

APPENDICES

Appendix A: Field Procedures
Appendix B: Soil Boring Logs
Appendix C: Laboratory Analytical Reports
Appendix D: Village of Lyons Ordinance 5-18-99-3

1.0 BACKGROUND

BB&J performed a Phase II Environmental Site Assessment (Phase II ESA) for the parcel of land located at 4226 Lawndale Avenue in Lyons, Illinois (Subject Property). A site location map is provided as Figure 1. BB&J understands the Subject Property is intended for redevelopment as a community center, associated parking lots and landscaped areas.

2.0 OBJECTIVE

The objective of this project was to help evaluate management and construction considerations to address environmental conditions related to the redevelopment of the Subject Property as a community center.

3.0 SUBSURFACE ASSESSMENT

The following sections present a summary of the subsurface assessment activities conducted for the Subject Property. Details of the subsurface assessment activity procedures are presented within the Field Procedures (Appendix A).

3.1 Pre-Mobilization Activities

Prior to initiating field activities, BB&J prepared a Health and Safety Plan (HSP) for use by BB&J's on-site representative to address known and suspected site-specific constituents of concern (COCs), potential site and work-related hazards, and additional health and safety issues. In addition, HH Holmes of Wheeling, Illinois (HH Holmes) contacted the approved Illinois utility locating companies to clear the underground utilities on May 28, 2007 (over 72 hours prior to field work).

3.2 Subsurface Soil Investigation

On June 1, 2007 and June 4, 2007, BB&J provided oversight for the advancement of 13 soil borings utilizing a hollow stem auger (CCSB-28 through CCSB-40), the installation of three permanent monitoring wells (CCMW-34, CCMW-35, and CCMW-36), and installation of three soil gas probes (CCSG-32, CCSG-33, and CCSG-35) by HH Holmes. Six of the soil borings, the three permanent monitoring wells, and the three soil gas probes were advanced within the footprint of the proposed community center on the southern portion of the Subject Property. The soil borings were located as follows:

- Six soil borings, CCSB-32 through CCSB-37, were advanced in the location of the proposed community center;
- Three soil borings, CCSB-28 through CCSB-30, were advanced north of the proposed community center;
- Two soil borings, CCSB-31 and CCSB-38, were advanced along the edge of the quarry, on the western side of the Subject Property; and,
- Two soil borings, CCSB-39 and CCSB-40, were advanced behind the existing MSC buildings.

Refer to Figure 2 for a site plan showing soil boring locations.

Soil samples were collected concurrently with the geotechnical investigation at the Subject Property and in accordance with BB&J's field procedures, as summarized in Attachment A. BB&J collected the soil samples from 10 of the 13 soil borings (CCSB-31 through CCSB-40), performed visual classification of soil type(s), field screened the samples using a photoionization detector (PID), and submitted select soil samples for laboratory chemical analyses.

As described in BB&J Proposal No. PN7-0136, two soil samples from 10 soil borings were sampled and submitted from the following depths to First Environmental Laboratories, Inc. of Naperville, Illinois (First Environmental) for chemical analyses:

- Near surface [i.e. zero to three feet below ground surface (bgs]; and,
- One additional depth based on field observations and field screening.

As such, the following soil samples were selected for laboratory analyses:

CCSB-31
- 6-7.5 feet bgs
- 8.5-10 feet bgs

CCSB-32
- 1-2.5 feet bgs
- 3.5-5 feet bgs

CCSB-33
- 3.5-5 feet bgs
- 13.5-15 feet bgs

CCSB-34
- 6-7.5 feet bgs
- 18.5-20 feet bgs

CCSB-35
- 1-5 feet bgs
- 13.5-15 feet bgs

CCSB-36
- 3.5-5 feet bgs
- 13.5-15 feet bgs

CCSB-37
- 3.5-5 feet bgs
- 13.5-15 feet bgs

CCSB-38
- 1-2.5 feet bgs
- 6-7.5 feet bgs

CCSB-39
- 3.5-5 feet bgs
- 8.5-10 feet bgs

CCSB-40
- 1-2.5 feet bgs
- 8.5-10 feet bgs

Due to a lack of recovery, BB&J was not able to submit a sample from 1.0 to 3.0 feet bgs for each boring, in which case BB&J submitted a sample from 3.5 to 5.0 feet bgs[1].

Each of the soil samples collected from the soil borings were analyzed for the following:

- Volatile organic compounds (VOC) by United States Environmental Protection Agency (USEPA) Method 8260B;
- Semivolatile organic compounds (SVOC) by USEPA Method 8270C;
- Polychlorinated biphenyls (PCBs) by USEPAA Method 8082;
- Resource Conservation and Recovery Act (RCRA) metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

In addition, an equipment rinsate sample also was collected and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, organochlorine pesticides and pH. The laboratory supplied the trip blank sample for quality assurance/quality control (QA/QC) purposes. The trip blank sample was analyzed for VOCs.

3.3 Ground-Water Investigation

On June 1, 2007 and June 4, 2007, BB&J provided oversight for the installation of three permanent monitoring wells (CCMW-34, CCMW-35, and CCMW-36) in their respective soil boring locations by HH Holmes. Refer to Figure 2 for a site plan showing permanent monitoring well locations. On June 5, 2007, BB&J purged each of the three permanent monitoring wells, allowed the well to recharge, and collected ground-water samples from each of the wells. The samples collected were analyzed for the following:

- VOCs by USEPA Method 8260B;
- SVOCs by USEPA Method 8270C;
- PCBs by USEPA Method 8082;

[1] For CCSB-34 a sample from 6-7.5 feet bgs was the nearest sample to the surface possible for the boring.

- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

Details of the aforementioned subsurface assessment activities are presented within the Field Procedures (Appendix A).

3.4 Soil Gas Survey

On June 1, 2007 and June 4, 2007, BB&J oversaw the installation of three soil gas probes (CCSG-32, CCSG-33, and CCSG-35) in their respective soil boring locations by HH Holmes. Refer to Figure 2 for a site plan showing soil gas locations.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Active Soil Gas Investigation Advisory* Section 2.2.5 A 1 and 2, created by the California Environmental Protection Agency (CalEPA), dated January 28, 2003[2]. After sampling, the soil boring was backfilled to approximately 6 feet below ground surface (bgs) to leave a hole for the soil vapor probe. Soil probes CCSG-32, CCSG-33, and CCSG-35 were installed to the bottom of the hole at an approximate depth of six feet bgs. Approximately one foot of sand was poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

The soil gas samples were collected using 400-milliliter (mL) Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60 mL plastic syringe with a three-way valve. Approximately four mL per foot, or a total of 40 mL (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch swagelok

[2] This document was prepared by the CalEPA Department of Toxic Substance Control (DTSC) and Los Angeles Regional Water Quality Control Board (LARWQCB) to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the CalEPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

3.5 Limited Flux Chamber Survey

On June 6, 2007, BB&J conducted a Limited Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property and provide data a preliminary risk evaluation based on the proposed community center use of the Subject Property. One soil flux chamber was utilized to collect soil gas in the footprint of the proposed community center. BB&J placed one flux chamber (CCSF-35) on the ground surface during the afternoon of June 6, 2007 and packed soil around the flux chamber edges to create an air-tight environment inside the flux chamber. BB&J returned the morning of June 7, 2007 to collect the accumulated gas sample. For the location of the soil flux sample location, refer to Figure 2.

As part of the sampling procedures for the flux chambers, an "initial" soil flux sample of the ambient air within the flux chamber was collected by connecting the 400-mL Summa canister to the soil flux chamber once the flux chamber was placed on the ground and an air-tight environment had been created. The purpose of the "initial" soil flux sample was to evaluate whether any VOCs present at the surface of the ground were collected inside the flux chamber at the time the flux chamber was placed on the ground surface. Any subsequent soil flux samples that contained high concentrations of VOCs would then be compared to the "initial" soil flux sample to determine whether the high concentrations of VOCs were from soil gas collected at the time the flux chamber was placed on the ground surface.

The flux chamber was then left overnight to collect gas from the subsurface and equilibrate[3]. The following morning, BB&J returned to the Subject Property to collect the incubated flux chamber samples using 400-mL Summa canisters. The soil flux samples were identified by the sample location and the

[3] The soil flux chambers were situated on the ground and exposed to soil vapors for at least eight hours.

time they were collected. BB&J personnel shipped the Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

4.0 FINDINGS AND ANALYTICAL RESULTS

The following sections present the subsurface assessment findings and a summary of the laboratory analytical results.

4.1 Subsurface Geology and Hydrogeology

Based on visual classification of the subsurface soil encountered during the assessment, the primary subsurface soil type consisted of soft, gray and brown clay fill, or loose brown sand fill from approximately 4 to 6 feet, and loose brown/gray sand from approximately 6 feet to auger refusal, believed to be the top of bedrock. Traces of gravel were found throughout the borings, at depths of 0 to 30 feet bgs. Additionally, occasional ash and asphalt debris were encountered. Bedrock was encountered at depths of 16 to 22 feet bgs at the Subject Property. Copies of the field soil probe logs are presented in Appendix B. Ground-water was encountered at approximately 12 feet bgs in CCMW-34 and CCMW-35, and 11 feet bgs in CCMW-36.

Based upon measured ground-water elevations, as shown in the Potentiometric Map as Figure 3, the ground-water at the Subject Property appears to generally flow radially from CCMW-36 to the north-northeast and north-northwest. Ground-water elevations were determined based on a land survey of permanent monitoring wells CCMW-34, CCMW-35, and CCMW-36, performed on June 5, 2007, by BB&J (see Figure 4, for the Monitoring Well Diagrams, Table 4 for the Monitoring Well Construction and Development Data and Table 5 for the Monitoring Well and Ground-Water Elevation Data).

4.2 Field Screening Results

Based on the field screening results of soil samples, organic vapor readings ranged from 0.0 parts per million (ppm)[4] to 47.0 ppm. Field screening results are presented on the field probe logs contained in Appendix B.

4.3 Laboratory Analytical Results

It is BB&J's understanding that the Subject Property is being considered for commercial purposes. Therefore, BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[5] to compare the results of the soil gas survey to potential vapor intrusion pathways into the proposed commercial buildings. In using the J&E calculator, BB&J utilized commercial exposure factors as the Subject Property is being developed for commercial use[6].

In addition, as the Subject Property is intended for commercial use, the soil and ground-water laboratory analytical data (Appendix C) was compared to the established criteria in the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action (TACO) industrial/commercial and construction worker Remediation Objectives (ROs) to evaluate the potential risk posed by detected COCs.

A summary of the soil gas analytical results for samples collected from proposed commercial building locations were compared to J&E calculated Estimated Risk-based Soil Gas Standards for a commercial scenario is in Table 1. A summary of the soil analytical results is found in Table 2. A summary of the ground-water analytical results is found in Table 3. A summary of Flux Chamber Laboratory Analytical Results is found in Table 4.

4.3.1 Soil Investigation

BB&J compared the laboratory analytical results for VOCs, SVOCs, PCBs, RCRA metals, herbicides, and organochlorine pesticides to the IEPA TACO ROs for industrial/commercial and construction worker exposure pathways [Table B of 35 IAC Section 742 Appendix B] and Class I and Class II [Table D of 35

[4] Organic vapor readings are based on a calibration of the mini-RAE PID to 100 ppm isobutylene. All background readings were 0.0 ppm.
[5] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[6] The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response *Risk Assessment Guidance For Superfund Volume I: Human Health Evaluation Manual* (RAGS Volume I), dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

IAC Section 742 Appendix B] ground-water migration. A summary of the soil laboratory analytical results is presented in Table 2.

PCBs, Herbicides and Organochlorine Pesticides

No PCBs, herbicides, or organochlorine pesticides were detected at concentrations above applicable laboratory reporting limits (RLs) in the soil samples collected.

VOCs

Concentrations of toluene and trichloroethene were detected above laboratory RLs in soil samples collected at two soil boring locations and depths at the Subject Property. Toluene was detected in soil boring CCSB-37 (13.5-15) at 0.0070 milligrams per kilograms (mg/kg); however, it did not exceeded the IEPA TACO ROs. Trichloroethene was detected in soil boring CCSB-32 (3.5-5) at 0.125 mg/kg, which exceeded the applicable TACO RO for the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water.

SVOCs

SVOCs were detected above laboratory RLs in 10 of the 20 soil samples collected at various soil boring locations and depths throughout the Subject Property. Of these 10 samples, five exhibited one or more SVOCs at concentration exceeding one or more applicable TACO ROs. Specifically, the samples reported to contain polynuclear aromatic hydrocarbons (PAHs) at concentration exceeding one or more applicable TACO ROs were:

- CCSB-32 (1-2.5);
- CCSC-32 (3.5-5);
- CCSB-35 (1-5);
- CCSB-36 (13.5-15); and,
- CCSB-40 (1-2.5).

Of the SVOCs identified above laboratory RLs, the following SVOCs and concentrations exceeded one or more applicable TACO ROs:

- Benzo(a)anthracene at a concentration of 2.350 mg/kg [CCSB-40(1-2.5)] exceeded the exceeded the TACO RO for the construction worker ingestion exposure route and the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water;

- Benzo(a)pyrene at concentrations of 2.010 mg/kg [CCSB-32(3.5-5)], and 2.340 mg/kg [CCSB-40(1-2.5)], exceeded the TACO RO for the industrial/commercial ingestion exposure route;

- Naphthalene at a concentration of 2.360 mg/kg [CCSB-36(13.5-15)], 3.080 mg/kg [CCSB-32(3.5-5)], 4.520 mg/kg [CCSB-35(1-5)], and 5.770 mg/kg [CCSB-32(1-2.5)] exceeded the TACO RO for the construction worker inhalation exposure route.

With the exception of naphthalene at CCSB-36(13.5-15), of the SVOCs that were detected above the TACO ROs, all were found within one to five feet bgs.

RCRA Metals

Multiple RCRA metals were detected above laboratory RLs in soil samples collected at soil boring locations and depths throughout the Subject Property. However, of the RCRA metals identified above laboratory RLs, only mercury exceeded the applicable TACO RO for the construction worker inhalation exposure route in the sample collected from CCSB-32 (3.5-5 feet bgs) (0.2 mg/kg). In addition, this soil sample exceeded the Soil Component of the Ground-water Ingestion Exposure Route for Class I and Class II ground-water. In addition, concentrations of lead in soil samples collected from CCSB-32 (1-2.5 feet bgs) (369 mg/kg), and CCSB-32 (3.5-5 feet bgs) (121 mg/kg) exceeded the applicable TACO RO for the Soil Component of the Ground-water Ingestion Exposure Route for Class I ground-water.

4.3.2 Ground Water

Ground-water samples were collected from permanent monitoring wells CCMW-34, CCMW-35, and CCMW-36, and analyzed for VOCs, SVOCs, PCBs, RCRA metals, herbicides, and organochlorine pesticides. BB&J compared the laboratory analytical results to the IEPA TACO ROs for the Class I and Class II ground-water RO [Table E of 35 IAC 742, Appendix B]. A summary of the ground-water laboratory analytical results is presented in Table 3.

PCBs, Herbicides, Organochlorine Pesticides

No PCBs, herbicides, or organochlorine pesticides were detected at concentrations above applicable laboratory RLs in the ground-water samples collected.

VOCs

Of the three ground-water samples, vinyl chloride from the ground-water sample collected at CCMW-35 was the only VOC detected above laboratory RLs at a concentration of 0.0287 milligram per liter (mg/L). In addition, this concentration of vinyl chloride exceeded the ground-water TACO RO for Class I and Class II ground-water ingestion.

SVOCs

Of the three ground-water samples, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene from the ground-water sample collected at CCMW-36 were the only SVOCs detected above laboratory RLs. The concentrations of benzo(a)anthracene (0.00032 mg/L) and benzo(k)fluoranthene (0.00031 mg/L) detected exceeded the ground-water TACO RO for Class I ground-water ingestion, but not Class II. However, the concentrations of benzo(a)pyrene (0.0003 mg/L) and benzo(b)fluoranthene (0.00027 mg/L) detected exceeded the ground-water TACO RO for Class I and Class II ground-water ingestion.

RCRA Metals

Of the three ground-water samples analyzed for RCRA metals, one or more of the following metals were detected in ground-water samples collected at CCMW-34, CCMW-35, and CCMW-36 at concentrations above the applicable laboratory RLs: arsenic, barium, chromium, lead, and silver. However, none of the RCRA metals identified above laboratory RLs exceeded the IEPA TACO ROs.

4.3.3 Soil Gas

Soil gas samples (CCSG-32, CCSG-33, and CCSG-35) were analyzed for VOCs and methane. Numerous VOCs were detected in the three soil gas samples in the proposed location of the community center by USEPA TO-15 analysis, including:

- Acetone
- Benzene
- 2-Butanone
- Carbon disulfide
- Chloromethane
- Cyclohexane
- 1,1-Dichloroethane
- Ethylbenzene
- 4-Ethyltoluene
- n-Heptane
- n-Hexane
- 4-Methyl-2-pentanone
- Propene
- Styrene
- Toluene
- Trichloroethene (TCE)
- Trichlorofluoromethane
- 1,3,5-Trimethylbenzene
- 1,2,4-Trimethylbenzene
- Vinyl chloride
- m,p-Xylene

- cis-1,2-Dichloroethene
- Tetrachloroethene (PCE)
- o-Xylene

In addition, methane was detected in each of the three soil gas samples using a modified version of USEPA Method 8015B. Specific locations and concentrations of each of these are presented in Figure 2, and Table 1. Further discussion of these results is provided in Section 5.0.

4.3.4 Flux Chamber Results

BB&J used one flux chamber device (CCSF-35) to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property. Using USEPA TO-15 analysis, chloromethane and tetrachloroethene were detected in the soil flux sample located at CCSF-35 at levels of 34 micrograms per meter cubed (ug/m^3) and 17 ug/m^3, respectively. In addition, methane was detected above laboratory RLs in the soil flux sample using a modified version of USEPA Method 8015B. Methane was detected at a concentration of 0.39%. The specific location and concentrations of CCSF-35 are presented in Figure 2, and Table 4. Further discussion of these results is provided in Section 5.3.

4.3.5 QA/QC

No VOCs, SVOCs, RCRA metals, herbicides, or organochlorine pesticides were reported above laboratory RLs in the equipment rinsate sample and no VOCs were reported above laboratory RLs in the trip blank.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following sections present BB&J's conclusion and recommendations based on Phase II ESA findings at the Subject Property.

5.1 Subsurface Soil Investigation

During the Phase II ESA, BB&J collected 20 soil samples from 10 soil probe locations throughout the south portion of the Subject Property. The samples were submitted to First Environmental and analyzed for VOCs, SVOCs, RCRA metals, herbicides, organochlorine pesticides and pH.

No PCBs, herbicides, or organochlorine pesticides were detected at concentrations above applicable laboratory RLs in the soil samples collected. However, VOCs, SVOCs and RCRA metals were detected above laboratory RLs in soil samples collected at various soil boring locations and depths throughout the

Subject Property. Furthermore, the VOCs, SVOCs and RCRA metals that were reported above applicable TACO ROs, including the construction worker ingestion exposure route and migration to ground-water ingestion exposure routes, were located within one to five feet bgs with the exception of naphthalene at CCSB-36 (13.5-15 feet bgs) and toluene at CCSB-37 (13.5-15 feet bgs). Of the SVOCs and RCRA metals identified above laboratory RLs, the benzo(a)anthracene, naphthalene, and mercury exceeded the construction worker ingestion exposure route.

Consequently, BB&J recommends eliminating the ingestion exposure pathway by installing an engineered barrier. Given the future intended use as a community center, (1) covering the entirety of the Subject Property with either a building slab or asphalt parking lot, (2) incorporating the engineered barriers into the institutional control (i.e., deed restriction), and (3) providing for operation and maintenance of the barriers, all of which would be in perpetuity, these actions would result in eliminating this pathway. With respect to the migration to ground-water concerns, it should be noted that the Village of Lyons currently has an ordinance restricting the use of ground water in place, thereby effectively eliminating this pathway. Specifically, Ordinance 5-18-99-3 was accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons and states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons." A copy of this use restriction can be found in Appendix D.

5.2 Ground Water

During the Phase II ESA, BB&J collected ground-water samples from three permanent monitoring wells. The ground-water samples were submitted to First Environmental and analyzed for VOCs, SVOCs, RCRA metals, herbicides, organochlorine pesticides and pH.

Of the three ground-water samples analyzed for PCBs, herbicides and organochlorine pesticides, none were detected above the laboratory RLs.

Of the three ground-water samples analyzed for VOCs, only vinyl chloride from the ground-water sample collected at CCMW-35 was detected above laboratory RLs at a concentration of 0.0287 mg/L. The concentration of vinyl chloride detected exceeded the ground-water TACO RO for Class I and Class II ground-water ingestion.

Of the three ground-water samples analyzed for SVOCs, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene from the ground-water sample collected at CCMW-36 were detected above laboratory RLs. The concentrations of benzo(a)anthracene (0.00032 mg/L) and benzo(k)fluoranthene (0.00031) detected exceeded the ground-water TACO RO for Class I ground-water ingestion, but not Class II. However, the concentrations of benzo(a)pyrene (0.0003 mg/L) and benzo(b)fluoranthene (0.00027) detected exceeded the ground-water TACO RO for Class I and Class II ground-water ingestion.

Of the three ground-water samples analyzed for RCRA metals, one or more of the following metals were detected in ground-water samples collected at CCMW-34, CCMW-35, and CCMW-36 at concentrations above the applicable laboratory RLs: arsenic, barium, chromium, lead, and silver. However, the RCRA metals identified above laboratory RLs did not exceeded the IEPA TACO ROs.

Although concentrations of vinyl chloride, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene exceeded TACO ROs, the Village of Lyons already has an ordinance in place. Ordinance 5-18-99-3 was accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons and states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons." A copy of this use restriction can be found in Appendix D. Due to the fact that a restriction on the ground-water for the Subject Property currently exists, BB&J does not recommend further investigation with respect to ground-water.

5.3 Soil Gas Survey

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in buried wastes and/or impacted groundwater can emit vapors that may migrate through subsurface soil and into air spaces of overlying buildings.

5.3.1 Johnson and Ettinger Calculations

BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[7] to evaluate the vapor intrusion pathway into the proposed community center. This J&E calculator replicates the implementation that the USEPA Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (OSWER Vapor Intrusion Guidance) used in developing its Vapor Intrusion Guidance but includes a number of enhancements that are facilitated by web implementation. The J&E calculator has become increasingly popular with regulators and consultants over the last 10 years and several manuscripts have been published on its use. It should be noted that the State of Illinois does not provide any guidance or soil gas standards with regard to vapor intrusion.

Briefly, the calculator is a one-dimensional analytical solution, which incorporates both advection and diffusion transport mechanisms to produce a unitless "attenuation factor." This attenuation factor is a measure of how soil and building properties limit the intrusion of organic vapors into overlying buildings and is defined as the concentration of the compound in indoor air divided by the concentration of the compound in soil gas or ground water.

Although the J&E calculator is inherently conservative, BB&J also made the following conservative assumptions in running the calculator:

- The highest soil vapor concentration of a given constituent identified at the Subject Property was assumed to be the concentration present at the Subject Property (even if lower concentrations were identified elsewhere) for the proposed community center (i.e., as presented in Table 1);

- OSWER Vapor Intrusion Guidance[8] allows a site risk manager to select media-specific target concentrations for screening at three cancer risk levels: 10^{-4}, 10^{-5}, and 10^{-6}; however, BB&J compared the modeled results to the most conservative of these (10^{-6});

- A less protective, best estimate and more protective target concentration were computed for the maximum soil gas concentration of a given constituent detected at the Subject Property. These computed "backward" target concentrations served as comparison to the detected soil gas concentrations at the Subject Property. The best estimate concentrations are based on the best guesses of depth to the contamination source and residual moisture content for the chosen soil type. The less protective and more protective range of values is computed based on user-specified uncertainty in both depth to the contamination source and unsaturated zone moisture content; and,
- The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response RAGS Volume I dated March 25, 1991, Summary of

[7] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[8] http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf

Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample (see Section 4.2).

5.3.2 Soil Gas Conclusions

As indicated in Table 2, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected in the soil gas samples. Of the VOCs detected in gas samples CCSG-32, CCSG-33, and CCSG-35, TCE detected in CCSG-33, and vinyl chloride detected in CCSG-35 were estimated to result in indoor concentrations greater than the modeled "more-protective" and "best estimate" Target Concentrations for Estimated Risk-based Soil Vapor Standards[9].

Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, i.e., Superfund) risk assessment, modeled cancer risks in this scenario were on the order of approximately one in 1,000,000 chance per employee developing cancer directly attributable to vapor intrusion into the community center due to on-site sources. This risk is driven primarily by the high concentration of TCE and vinyl chloride, which are known or suspected carcinogens.

In addition to the VOCs detected at the proposed community center, as indicated in Table 2 methane was detected in each soil gas sample from the three soil probe locations. Of the methane detected in the three gas samples, the soil gas sample CCSG-33 contained concentrations above the lower explosive limit (LEL), and is considered to be within the explosive range for methane[10].

5.3.3 Soil Gas Recommendations

As indicated in Table 2, TCE and vinyl chloride were reported to be present at concentrations marginally above the modeled "best-estimate" Target Concentrations for Estimated Risk-based Soil Gas Standards.

[9] These J&E calculations used commercial/industrial default exposure factors due to the intended commercial use of Subject Property.
[10] According to the National Fire Protection Association (NFPA), the LEL for methane is 5.0%, while the UEL is 15%.

Such concentrations suggest that these constituents have the potential to accumulate within the proposed community center concentrations that would pose a human health risk. However, it should be noted that (1) the Johnson-Ettinger model is inherently conservative and (2) new soil was continually being placed on the south and west sides of the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings.

Possible remedies to limit the exposure of this constituent to the proposed community center include installation of a subsurface vapor barrier beneath the proposed community center at the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting subsurface would require maintenance and upkeep for the lifetime of the building. In addition, the venting system may require air permits from IEPA to discharge VOCs into the ambient air.

Since methane was detected within its explosive range in one of the three soil gas samples, the presence of methane needs to be explored further. To ensure that methane would not accumulate beneath or within the proposed community center, proper venting of this structure would potentially be required to reduce the potential for explosions to occur. The presence of methane in the gas samples may indicate that material inconsistent with IEPA's definition of clean construction and demolition debris may be present beneath the surface of the Subject Property. As the material decomposes, shifting of the subsurface may occur, causing structural damage to overlying structures, including the proposed building on the south portion of the Subject Property.

The specific sources of the VOCs and methane could not be determined by the scope of this investigation. However, BB&J understands that a gasoline station was formerly located on the northeast portion of the Subject Property near the intersection of Ogden Avenue and Lawndale Avenue. A leaking underground storage tank (LUST) incident was reported for the gasoline station and a No Further Remediation (NFR) letter was issued for the LUST incident. Despite the issuance of the NFR, the gasoline station may still be the source of the gasoline-related compounds, partly or wholly.

Sources of the chlorinated solvents and non-chlorinated solvents have not been fully identified. However, it should be noted that the soil gas sample where vinyl chloride was detected, CCSG-35, also matches the location where vinyl chloride was detected above the ground-water TACO RO for Class I and Class II ground-water ingestion. The soil samples collected from this soil boring location did not have concentrations of vinyl chloride above laboratory RLs. This suggests that vinyl chloride is migrating as soil gas from the ground-water through the subsurface. Further, due to the absence of vinyl chloride in

the soil from this soil boring location, it suggests that vinyl chloride is migrating via ground-water to this location from either off-site locations or locations that have not been previously addressed as part of this investigation.

The modeling conducted by BB&J should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model include, but are not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

5.4 Soil Flux Survey

BB&J used one flux chamber devices (CCSF-35) to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property in an outdoor recreational (i.e. residential) scenario. Specifically, the flux chamber devices can be used to model cancer risks against a bench mark. Details of the methods used in this calculation can be found in *How to Collect Reliable Soil Gas Data for Upward Risk Assessments, Part 2, Surface Flux Chamber Method* [Hartman, 2003].

The basic approach of the flux chamber method was to use an enclosure or chamber to isolate a surface from the ambient air and collect compounds emanating from the subsurface. Compounds either build-up over time in the static chamber headspace or, in the dynamic chamber method, clean sweep air is added to the chamber at a controlled rate. The effluent air from the chamber is collected using canisters and analyzed for chemicals of concern.

The emission rate of chemicals, ER_i (milligrams per minute per square meter) is calculated as:

For Static Chambers:

$$ER_i = \frac{C_c \times V_c}{A \times T}$$

It is BB&J's understanding that preliminary redevelopment plans for the Subject Property include a proposed community center and paved and unpaved areas, such as parking lots and landscaped areas. As such, an equivalent room concentration can be easily computed from the measured chamber concentration based upon the fact that the flux into the chamber is the same as the flux into the room (since flux is per unit area). The equation is:

$$\mathbf{C_r = ER_i * A_r / Q}$$

Where:

- C_c is the static chamber concentration after the incubation period (µg/m^3);
- C_r is the area of the room concentration (µg/m^3);
- V_c is the volume of the static chamber (m^3);
- T is the incubation time of the static or dynamic chamber (minute);
- A is the contact area of the static or dynamic chamber to surface soil (m^2);
- A_r is the room area (m^2); and,
- Q is the volumetric flow rate in the room area (m^3 /min).

Using these parameters and the laboratory analytical data collected from the soil flux canisters, BB&J calculated C_r for each of the constituents detected in the soil flux sample to determine a preliminary risk assessment for the proposed community center. Further details of the calculations are in Table 4. The following key assumptions were used to complete these calculations for a recreational use scenario:

- The incubation time (T) for each soil flux sample was the time the soil flux canister was initially placed on the ground to the time the soil flux sample was collected. Every soil flux sample had an incubation time of at least 8 hours;
- The area of the of the field (A_r) is 186 m^2; and,
- The room ventilation rate (Q) is 3.78 m^3/min.

Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA (i.e., Superfund) risk assessment, modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench mark used for risk assessment purposes. Furthermore, the assumptions noted above reflect a conservative approach to calculating the modeled cancer risks. For instance, the calculations are based upon a soil flux sample which was collected directly from the bare soil of the Subject Property.

Clean fill, subsurface vapor barriers, and a slab-on-grade foundation would likely reduce the potential release of COCs from the subsurface as these barriers would reduce the concentration of constituents detected at the surface of the Subject Property and in turn reduce the cancer risk.

However, it should be noted that the calculations are to be used only as a preliminary assessment of the soil gas conditions at the ground surface of the Subject Property per the controlled conditions of the static measurements used in this calculation. In addition, the model utilized was conservative, and although the flux chamber was located on the Subject Property, the findings are only specific to a limited area surrounding the flux chamber.

Possible remedies to further limit the exposure of the detected constituents to the surface of the Subject Property include installation of a subsurface vapor barrier beneath the proposed community center at the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting system would require maintenance and upkeep for the lifetime of the Subject Property. In addition, the venting system may require air permits from IEPA to discharge VOCs into the ambient air. In addition, regarding the outdoor areas of the proposed community center, the presence of an asphalt-paved parking lot or other engineered barrier would be adequate to eliminate the inhalation exposure pathway in a manner consistent with (1) our modeling results and (2) IEPA guidelines. Based on the calculated risks and given the intended use of the Subject Property for the proposed community center, BB&J has no further sampling recommendations regarding the soil flux survey. However, if the intended use for the Subject Property changes, further investigation, may be necessary to further investigate risks associated with potential VOCs emitted to the surface of the Subject Property.

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results

				Maximum Concentration Detected at Subject Property	BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards[1]			Explosive Range	
Soil - Gas ID	CCSG-32	CCSG-33	CCSG-35		Less Protective Target Concentrations	Best Estimate Target Concentrations	More Protective Target Concentrations	Lower Explosive Limit (LEL) [2]	Upper Explosive Limit (UEL) [2]
Soil Sample Depth[3]	6.0	6.0	6.0						
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(%)	(%)
USEPA Method T0-15 (VOCs)									
Acetone	150.0	42.0	200.0	200.0	819,400	291,800	163,100	NA	NA
Benzene	13.0	17.0	11.0	17.0	15,770	3,831	1,921	NA	NA
2-Butanone (MEK)	17.0	18.0	48.0	48.0	3,444,000	1,121,000	556,400	NA	NA
Carbon disulfide	20.0	21.0	49.0	49.0	2,642,000	664,200	349,000	NA	NA
Chloromethane (Methyl Chloride)	ND	ND	11.0	11.0	8,865	2,338	1,297	NA	NA
Cyclohexane	24.0	33.0	50.0	50.0	NMD	NMD	NMD	NA	NA
1,1-Dichloroethane	ND	12.0	ND	12.0	2,576,000	605,300	289,800	NA	NA
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	96.0	7.9	7.5	96.0	181,300	42,630	20,370	NA	NA
Ethylbenzene	12.0	13.0	11.0	13.0	13,000	3,057	1,468	NA	NA
4-Ethyltoluene	5.6	5.8	ND	5.8	7,737	1,819	873.5	NA	NA
n-Heptane (Heptane)	30.0	29.0	44.0	44.0	NMD	NMD	NMD	NA	NA
n-Hexane (Hexane)	29.0	54.0	63.0	63.0	4,212,000	1,272,000	803,500	NA	NA
4-Methyl-2-pentanone (Methylisobutylketone)	ND	ND	8.2	8.2	354,500	95,550	46,120	NA	NA
Propene	64.0	ND	600.0	600.0	NMD	NMD	NMD	NA	NA
Styrene	ND	7.7	ND	7.7	3,661,000	857,200	405,700	NA	NA
Tetrachloroethene (Tetrachloroethylene)	7.1	12.0	7.2	12.0	4,961	1,156	549	NA	NA
Toluene	29.0	67.0	19.0	67.0	1,777,000	430,500	215,200	NA	NA
Trichloroethene (Trichloroethylene)	**20.0**	**34.0**	12.0	**34.0**	123.9	29.4	14.32	NA	NA
Trichlorofluoromethane	10.0	ND	ND	10.0	2,136,000	516,000	257,900	NA	NA
1,3,5-Trimethylbenzene	6.9	5.7	ND	6.9	25,550	5,799	2,630	NA	NA
1,2,4-Trimethylbenzene	11.0	17.0	ND	17.0	37,090	8,422	3,826	NA	NA
Vinyl chloride	ND	ND	**560.0**	**560.0**	1,180	298	157.4	NA	NA
m,p-Xylene	22.0	43.0	19.0	43.0	NMD	NMD	NMD	NA	NA
o-Xylene	15.0	17.0	8.0	17.0	NA	7,533,000	3,766,000	NA	NA
USEPA Method 8015B	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Methane	0.45	**8.20**	0.24	**8.20**	NMD	NMD	NMD	5.0	15.0

Notes:

[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model and the known maximum concentration detected at the proposed Community Center (http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm). As the proposed commercial development will be used for commercial purposes, the standard default exposure parameters in the Johnson & Ettinger Vapor Intrusion Model were changed to reflect this use. The list of parameters that were changed can be found in the USEPA Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (RAGS Volume I), dated March 25, 1991, "Summary of Standard Default Exposure Factors", Commercial/Industrial Use, Inhalation of Contaminants Exposure Pathway.

[2] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.

[3] Depths indicated in feet below ground surface (bgs).

Numbers in **bold** indicates the exceedance of the Best Estimate and More Protective Target Concentrations.

Acronyms:

NA: Not applicable
ND: Not detected
NMD: No model data for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: MLH / 6.12.2007
Checked By: AWB / 6.21.2007

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:27:52 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08[g/mole] Henrys Constant: 0.0008474723[unitless]
Diffusivity in Air: 0.1240[cm^2/sec] Diffusivity in Water: 1.140e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007951[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.005227[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001751
Ground Water Attenuation Factor (α_{GW}): 0.001311
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 511[$\mu g/m^3$] or 215.3[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8.194e5[$\mu g/m^3$] or 3.452e5[ppbv]; Ground Water: 9.795e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2.918e5[$\mu g/m^3$] or 1.229e5[ppbv]; Ground Water: 4.598e5[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.631e5[$\mu g/m^3$] or 6.870e4[ppbv]; Ground Water: 3.363e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:29:25 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11[g/mole] Henrys Constant: 0.1152703[unitless]
Diffusivity in Air: 8.800e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000078[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 25 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00554[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000377[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001368
Ground Water Attenuation Factor (α_{GW}): 0.0001257
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 5.241[$\mu g/m^3$] or 1.642[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.577e4[$\mu g/m^3$] or 4939.[ppbv]; Ground Water: 447.9[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 3831.[$\mu g/m^3$] or 1200.[ppbv]; Ground Water: 361.9[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1921.[$\mu g/m^3$] or 601.8[ppbv]; Ground Water: 348.4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:30:38 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11[g/mole] Henrys Constant: 0.001130542[unitless]
Diffusivity in Air: 8.080e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00518[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.003388[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001303
Ground Water Attenuation Factor (α_{GW}): 0.000938
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1460[$\mu g/m^3$] or 495.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.444e6[$\mu g/m^3$] or 1.169e6[ppbv]; Ground Water: 3.092e6[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.121e6[$\mu g/m^3$] or 3.803e5[ppbv]; Ground Water: 1.377e6[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.564e5[$\mu g/m^3$] or 1.888e5[ppbv]; Ground Water: 9.705e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:07 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13[g/mole] Henrys Constant: 0.7157535[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006547[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003847[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001539
Ground Water Attenuation Factor (α_{GW}): 0.0001282
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1022[$\mu g/m^3$] or 328.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.642e6[$\mu g/m^3$] or 8.490e5[ppbv]; Ground Water: 1.344e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.642e5[$\mu g/m^3$] or 2.134e5[ppbv]; Ground Water: 1.114e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.490e5[$\mu g/m^3$] or 1.122e5[ppbv]; Ground Water: 1.078e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 13:02:28 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49[g/mole] Henrys Constant: 0.2477062[unitless]
Diffusivity in Air: 0.1260[cm^2/sec] Diffusivity in Water: 6.500e-6[cm^2/sec]
Unit Risk Factor: 0.000001[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007931[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0004727[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001749
Ground Water Attenuation Factor (α_{GW}): 0.0001565
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 4.088[$\mu g/m^3$] or 1.981[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8865.[$\mu g/m^3$] or 4296.[ppbv]; Ground Water: 127.3[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2338.[$\mu g/m^3$] or 1133.[ppbv]; Ground Water: 105.4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1297.[$\mu g/m^3$] or 628.7[ppbv]; Ground Water: 102.0[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:35:55 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethane CAS Number: 75343
Molecular Weight: 98.96[g/mole] Henrys Constant: 0.1239506[unitless]
Diffusivity in Air: 7.420e-2[cm^2/sec] Diffusivity in Water: 1.050e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.5[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003269[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001206
Ground Water Attenuation Factor (α_{GW}): 0.0001093
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 730[$\mu g/m^3$] or 180.5[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.576e6[$\mu g/m^3$] or 6.368e5[ppbv]; Ground Water: 6.707e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.053e5[$\mu g/m^3$] or 1.496e5[ppbv]; Ground Water: 5.386e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.898e5[$\mu g/m^3$] or 7.164e4[ppbv]; Ground Water: 5.179e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:03 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: cis-1,2-Dichloroethylene CAS Number: 156592
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.08772779[unitless]
Diffusivity in Air: 7.360e-2[cm^2/sec] Diffusivity in Water: 1.130e-5[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.035[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004634[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003552[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001199
Ground Water Attenuation Factor (α_{GW}): 0.0001186
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 51.1[$\mu g/m^3$] or 12.9[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.813e5[$\mu g/m^3$] or 4.575e4[ppbv]; Ground Water: 6226.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.263e4[$\mu g/m^3$] or 1.076e4[ppbv]; Ground Water: 4912.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.037e4[$\mu g/m^3$] or 5140.[ppbv]; Ground Water: 4706.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:37:40 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.1364569[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000011[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004722[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003106[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001216
Ground Water Attenuation Factor (α_{GW}): 0.000104
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 3.716[$\mu g/m^3$] or 0.8564[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.300e4[$\mu g/m^3$] or 2995.[ppbv]; Ground Water: 322.4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 3057.[$\mu g/m^3$] or 704.4[ppbv]; Ground Water: 261.9[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1468.[$\mu g/m^3$] or 338.2[ppbv]; Ground Water: 252.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18[g/mole] Henrys Constant: 35.82923[unitless]
Diffusivity in Air: 0.2000[cm^2/sec] Diffusivity in Water: 7.770e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 25 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.01259[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000721[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.002296
Ground Water Attenuation Factor (α_{GW}): 0.0002348
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 2920[$\mu g/m^3$] or 829[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4.212e6[$\mu g/m^3$] or 1.196e6[ppbv]; Ground Water: 415.2[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.272e6[$\mu g/m^3$] or 3.611e5[ppbv]; Ground Water: 347.0[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 8.035e5[$\mu g/m^3$] or 2.281e5[ppbv]; Ground Water: 336.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:38:59 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16[g/mole] Henrys Constant: 0.002453269[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004755[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.001889[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001222
Ground Water Attenuation Factor (α_{GW}): 0.0005711
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 116.8[$\mu g/m^3$] or 28.53[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.545e5[$\mu g/m^3$] or 8.658e4[ppbv]; Ground Water: 1.712e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 9.555e4[$\mu g/m^3$] or 2.334e4[ppbv]; Ground Water: 8.337e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 4.612e4[$\mu g/m^3$] or 1.127e4[ppbv]; Ground Water: 6.698e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:39:34 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83[g/mole] Henrys Constant: 0.3362604[unitless]
Diffusivity in Air: 7.200e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0.000003[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004532[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002767[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001179
Ground Water Attenuation Factor (α_{GW}): 0.00009288
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 1.363[$\mu g/m^3$] or 0.201[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4961.[$\mu g/m^3$] or 731.9[ppbv]; Ground Water: 53.04[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 1156.[$\mu g/m^3$] or 170.6[ppbv]; Ground Water: 43.63[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 549.0[$\mu g/m^3$] or 80.99[ppbv]; Ground Water: 42.16[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:10 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14[g/mole] Henrys Constant: 0.1257474[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 8.600e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005477[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003617[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001207
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 584[$\mu g/m^3$] or 155.1[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.777e6[$\mu g/m^3$] or 4.719e5[ppbv]; Ground Water: 4.738e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 4.305e5[$\mu g/m^3$] or 1.143e5[ppbv]; Ground Water: 3.848e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.152e5[$\mu g/m^3$] or 5.714e4[ppbv]; Ground Water: 3.708e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:40:41 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39[g/mole] Henrys Constant: 0.2057688[unitless]
Diffusivity in Air: 7.900e-2[cm^2/sec] Diffusivity in Water: 9.100e-6[cm^2/sec]
Unit Risk Factor: 0.00011[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004973[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003159[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001264
Ground Water Attenuation Factor (α_{GW}): 0.0001058
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.03716[$\mu g/m^3$] or 0.00692[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 123.9[$\mu g/m^3$] or 23.07[ppbv]; Ground Water: 2.089[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 29.40[$\mu g/m^3$] or 5.475[ppbv]; Ground Water: 1.708[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 14.32[$\mu g/m^3$] or 2.666[ppbv]; Ground Water: 1.648[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:41:21 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.09297282[unitless]
Diffusivity in Air: 6.060e-2[cm^2/sec] Diffusivity in Water: 7.920e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.003815[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002781[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001031
Ground Water Attenuation Factor (α_{GW}): 0.00009332
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 8.687[$\mu g/m^3$] or 1.768[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.709e4[$\mu g/m^3$] or 7550.[ppbv]; Ground Water: 1258.[µg/L]

Best Estimate Target Concentrations
Soil Gas: 8422.[$\mu g/m^3$] or 1714.[ppbv]; Ground Water: 1001.[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 3826.[$\mu g/m^3$] or 778.7[ppbv]; Ground Water: 961.1[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:00 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5[g/mole] Henrys Constant: 0.7413626[unitless]
Diffusivity in Air: 0.1060[cm^2/sec] Diffusivity in Water: 1.230e-5[cm^2/sec]
Unit Risk Factor: 0.0000088[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003938[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001559
Ground Water Attenuation Factor (α_{GW}): 0.0001311
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.4645[$\mu g/m^3$] or 0.1818[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1180.[$\mu g/m^3$] or 461.9[ppbv]; Ground Water: 5.768[μg/L]

Best Estimate Target Concentrations
Soil Gas: 298.0[$\mu g/m^3$] or 116.6[ppbv]; Ground Water: 4.779[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 157.4[$\mu g/m^3$] or 61.62[ppbv]; Ground Water: 4.625[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Thu Jun 7 12:42:35 CDT 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.08789842[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005478[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003933[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.000131
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 10220[$\mu g/m^3$] or 2355[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: Saturation[$\mu g/m^3$] or Saturation[ppbv]; Ground Water: Solubility[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 7.533e6[$\mu g/m^3$] or 1.736e6[ppbv]; Ground Water: Solubility[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 3.766e6[$\mu g/m^3$] or 8.678e5[ppbv]; Ground Water: Solubility[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

Table 2: Summary of Soil Laboratory Analytical Results

											Exposure Route-Specific Values for Soil[1]				Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route[8]				
											Industrial-Commercial[2]		Construction Worker[2]				Ground-water Migration pH range (8.25 to 8.74)		Ground-water Migration pH range (8.75 to 9.0)		Background Concentration of Chemicals [6, 7]
Soil Sample ID / Depth[5]	**CCSB-31 (6-7.5) (mg/kg)**	**CCSB-31 (8.5-10) (mg/kg)**	**CCSB-32 (1-2.5) (mg/kg)**	**CCSB-32 (3.5-5) (mg/kg)**	**CCSB-33 (3.5-5) (mg/kg)**	**CCSB-33 (13.5-15) (mg/kg)**	**CCSB-34 (6-7.5) (mg/kg)**	**CCSB-34 (18.5-20) (mg/kg)**	**CCSB-35 (1-5) (mg/kg)**	**CCSB-35 (13.5-15) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**(mg/kg)**
pH	8.81	8.64	9.15	8.94	9.81	9.51	9.70	9.46	9.58	9.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																					
Toluene	0.0063	ND	ND	ND	ND	ND	ND	ND	ND	ND	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA
Trichloroethene	ND	ND	ND	**0.125**	ND	ND	ND	ND	ND	ND	520	8.9	1,200	12	0.06	0.3	NA	NA	NA	NA	NA
SVOCs																					
Anthracene	ND	ND	0.943	0.855	ND	ND	ND	ND	ND	ND	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	0.4
Benzo(a)anthracene	ND	ND	0.981	1.920	ND	ND	ND	ND	0.505	ND	8	NRO	170	NRO	2	8	NA	NA	NA	NA	1.1
Benzo(a)pyrene	ND	ND	**0.901**	**2.010**	ND	ND	ND	ND	0.464	ND	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	1.3
Benzo(b)fluoranthene	ND	ND	0.879	2.430	ND	ND	ND	ND	0.539	ND	8	NRO	170	NRO	5	25	NA	NA	NA	NA	1.5
Benzo(k)fluoranthene	ND	ND	0.890	1.290	ND	ND	ND	ND	0.428	ND	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	0.99
Benzo(ghi)perylene	ND	ND	0.448	0.969	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	1.70
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	ND	0.374	ND	410	31,000	4,100	31,000	3,600	31,000	NA	NA	NA	NA	NRO
Carbazole	ND	ND	0.373	0.401	ND	ND	ND	ND	ND	ND	290	NRO	6,200	NRO	1	2.8	NA	NA	NA	NA	NRO
Chrysene	ND	ND	0.987	1.940	ND	ND	ND	ND	0.534	ND	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	ND	ND	0.147	0.324	ND	ND	ND	ND	ND	ND	0.8	NRO	17	NRO	2	7.6	NA	NA	NA	NA	0.42
Fluoranthene	ND	ND	1.720	2.730	ND	ND	ND	ND	1.100	ND	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	4.1
Fluorene	ND	ND	0.402	ND	ND	ND	ND	ND	ND	ND	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	0.18
Ideno(1,2,3-cd)pyrene	ND	ND	0.434	0.978	ND	ND	ND	ND	ND	ND	8	NRO	170	NRO	14	69	NA	NA	NA	NA	1.6
2-Methylnapthalene	ND	ND	ND	0.473	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NRO
Napthalene	ND	ND	**5.770**	**3.080**	ND	1.650	ND	ND	**4.520**	ND	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	0.2
Phenanthrene	ND	ND	1.840	1.440	ND	ND	ND	ND	0.882	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	1.3
Pyrene	ND	ND	1.860	2.630	ND	ND	ND	ND	1.020	ND	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	3.0
RCRA metals																					
Arsenic	2.1	10.8	10.1	10.6	6.2	2.8	**19.3**	4.7	2.4	3.5	13 [8]	1200	61	25,000	NA	NA	31	120	32	130	13
Barium	49.9	31.0	71.5	218.0	99.2	5.6	70.1	9.2	10.1	4.2	140,000	910,000	14,000	870,000	NA	NA	2,100	2,100	NRO	NRO	110
Cadmium	ND	0.4	0.3	3.1	0.4	0.1	0.7	123.0	0.3	0.2	2,000	2,800	200	59,000	NA	NA	430	4,300	NRO	NRO	0.6
Chromium	14.8	17.0	26.3	84.6	19.5	5.2	17.3	4.7	12.9	2.9	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	16.2
Lead	5.4	16.2	**369.0**	**121.0**	9.0	2.2	20.7	3.7	16.0	2.7	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	36
Silver	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	10,000	NRO	1,000	NRO	0.05	NRO	NRO	NRO	NRO	NRO	NRO
Mercury	ND	ND	ND	**0.2**	ND	ND	ND	ND	ND	ND	610	16	61	0.1	0.002	0.01	8	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 Title 35 IAC 742, Appendix B
2 Title 35 IAC 742, Appendix B, Table B
3 Title 35 IAC 742, Appendix B, Table C
4 Title 35 IAC 742, Appendix B, Table D
5 Soil boring depths are presented in feet bgs.
6 Title 35 IAC 742, Appendix A, Table H.
7 Title 35 IAC 742, Appendix A, Table G.
8 pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH values between 4.5 and 9.0
Numbers in **bold** indicates exceedance of TACO ROs.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No remediation objectives established by the IEPA available for the route of exposure
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
VOC - Volatile organic compounds

Prepared By: MLH / 06.15.07
Checked By: AWB / 06.21.07

Table 2: Summary of Soil Laboratory Analytical Results

											Exposure Route-Specific Values for Soil[1]				Soil Component of the Ground-Water Ingestion Exposure Route[2]		pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route[8]				
											Industrial-Commercial[2]		Construction Worker[2]				Ground-water Migration pH range (8.25 to 8.74)		Ground-water Migration pH range (8.75 to 9.0)		Background Concentration of Chemicals [6, 7]
Soil Sample ID / Depth[5]	**CCSB-36 (3.5-5) (mg/kg)**	**CCSB-36 (13.5-15) (mg/kg)**	**CCSB-37 (3.5-5) (mg/kg)**	**CCSB-37 (13.5-15) (mg/kg)**	**CCSB-38 (1-2.5) (mg/kg)**	**CCSB-38 (6-7.5) (mg/kg)**	**CCSB-39 (3.5-5) (mg/kg)**	**CCSB-39 (8.5-10) (mg/kg)**	**CCSB-40 (1-2.5) (mg/kg)**	**CCSB-40 (8.5-10) (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**Class II (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**Class I[3] (mg/kg)**	**Class II[4] (mg/kg)**	**(mg/kg)**
pH	8.80	9.33	9.76	9.27	9.89	8.65	8.34	9.28	9.12	8.68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs																					
Toluene	ND	ND	ND	0.0071	ND	ND	ND	ND	ND	ND	410,000	650	410,000	42	12	29	NA	NA	NA	NA	NA
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	520	8.9	1,200	12	0.06	0.3	NA	NA	NA	NA	NA
SVOCs																					
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	0.373	ND	120,000	NRO	120,000	NRO	570	2,900	NA	NA	NA	NA	0.13
Anthracene	ND	ND	ND	ND	ND	ND	0.342	ND	1.020	0.467	610,000	NRO	610,000	NRO	12,000	59,000	NA	NA	NA	NA	0.4
Benzo(a)anthracene	ND	ND	ND	ND	0.596	ND	0.779	ND	**2.350**	ND	8	NRO	170	NRO	2	8	NA	NA	NA	NA	1.1
Benzo(a)pyrene	0.259	ND	ND	ND	0.609	ND	**0.837**	ND	**2.340**	0.287	0.8	NRO	17	NRO	8	82	NA	NA	NA	NA	1.3
Benzo(b)fluoranthene	ND	ND	ND	ND	0.726	ND	0.913	ND	3.280	ND	8	NRO	170	NRO	5	25	NA	NA	NA	NA	1.5
Benzo(k)fluoranthene	ND	ND	ND	ND	0.467	ND	0.654	ND	1.270	ND	78	NRO	1,700	NRO	49	250	NA	NA	NA	NA	0.99
Benzo(ghi)perylene	ND	ND	ND	ND	ND	ND	5.650	ND	1.010	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	1.70
Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	0.421	ND	290	NRO	6,200	NRO	1	2.8	NA	NA	NA	NA	NRO
Chrysene	ND	ND	ND	ND	0.638	ND	0.784	ND	2.280	ND	780	NRO	17,000	NRO	160	800	NA	NA	NA	NA	2.70
Dibenzo(a,h)anthracene	ND	ND	ND	ND	0.096	ND	0.207	ND	0.479	ND	0.8	NRO	17	NRO	2	7.6	NA	NA	NA	NA	0.42
Fluoranthene	0.448	ND	ND	ND	1.600	ND	1.470	ND	3.920	0.531	82,000	NRO	82,000	NRO	4,300	21,000	NA	NA	NA	NA	4.1
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82,000	NRO	82,000	NRO	560	2,800	NA	NA	NA	NA	0.18
Ideno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	0.559	ND	1.060	ND	8	NRO	170	NRO	14	69	NA	NA	NA	NA	1.6
2-Methylnapthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	NRO
Napthalene	ND	**2.360**	ND	ND	ND	ND	ND	ND	ND	ND	41,000	270	4,100	1.8	12	18	NA	NA	NA	NA	0.2
Phenanthrene	ND	ND	ND	ND	1.280	ND	0.825	ND	2.290	0.382	NRO	NRO	NRO	NRO	NRO	NRO	NA	NA	NA	NA	1.3
Pyrene	ND	ND	ND	ND	1.200	ND	1.200	ND	3.080	0.435	61,000	NRO	61,000	NRO	4,200	21,000	NA	NA	NA	NA	3.0
RCRA metals																					
Arsenic	5.8	2.2	10.0	2.4	5.4	**13.5**	21.3	2.9	11.0	8.5	13 [6]	1200	61	25,000	NA	NA	31	120	32	130	13
Barium	80.2	5.1	21.5	4.1	36.7	35.2	95.3	6.5	58.1	28.1	140,000	910,000	14,000	870,000	NA	NA	2,100	2,100	NRO	NRO	110
Cadmium	0.3	0.1	0.2	0.1	0.3	0.6	0.8	0.1	0.8	0.3	2,000	2,800	200	59,000	NA	NA	430	4,300	NRO	NRO	0.6
Chromium	18.0	3.2	9.3	3.3	9.2	14.5	20.0	3.8	18.4	12.5	6,100	420	4,100	690	NA	NA	NRO	NRO	NRO	NRO	16.2
Lead	10.8	1.9	8.0	1.9	21.9	12.2	56.4	2.8	37.8	12.1	800	NRO	700	NRO	NA	NA	107	1,420	107	1,420	36
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000	NRO	1,000	NRO	0.05	NRO	NRO	NRO	NRO	NRO	NRO
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	610	16	61	0.1	0.002	0.01	8	40	NRO	NRO	0.06
Herbicides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochloride Pesticides	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 Title 35 IAC 742, Appendix B
2 Title 35 IAC 742, Appendix B, Table B
3 Title 35 IAC 742, Appendix B, Table C
4 Title 35 IAC 742, Appendix B, Table D
5 Soil boring depths are presented in feet bgs.
6 Title 35 IAC 742, Appendix A, Table H.
7 Title 35 IAC 742, Appendix A, Table G.
8 pH Specific Soil ROs for the Soil Component of the Ground-Water Ingestion Route are only calculated for pH values between 4.5 and 9.0
Numbers in **bold** indicates exceedance of TACO Ros.

Acronyms:

bgs - below ground surface
IAC - Illinois Administrative Code
IEPA - Illinois Environmental Protection Agency
mg/kg - milligrams per kilogram
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No remediation objectives established by the IEPA available for the route of exposure
PCB - Polychlorinated biphenyls
RO - Remediation Objective
RCRA - Resource Conservation and Recovery Act
SVOC - Semivolatile organic compounds
VOC - Volatile organic compounds

Prepared By: MLH / 06.15.07
Checked By: AWB / 06.21.07

Table 3: Summary of Ground-Water Laboratory Analytical Results

				Ground-Water ROs for the Ground-Water Component of the Ground-Water Ingestion Route[1]	
Ground-Water ID	**CCMW-34 (mg/L)**	**CCMW-35 (mg/L)**	**CCMW-36 (mg/L)**	**Class I (mg/L)**	**Class II (mg/L)**
pH @ 25°C	7.75	7.21	7.17	NA	NA
SVOCs (PAHs)					
Benzo(a)anthracene	ND	ND	**0.00032**	0.00013	0.00065
Benzo(a)pyrene	ND	ND	**0.0003**	0.0002	0.002
Benzo(b)fluoranthene	ND	ND	**0.00027**	0.00018	0.0009
Benzo(k)fluoranthene	ND	ND	**0.00031**	0.00017	0.00085
VOCs					
Vinyl Chloride	ND	**0.0287**	ND	0.002	0.01
PCBs	ND	ND	ND	NA	NA
RCRA Metals					
Arsenic	0.005	0.011	0.004	0.05	0.2
Barium	0.074	0.244	0.037	2	2
Chromium	0.001	0.003	0.002	0.1	1
Lead	ND	0.005	0.005	0.0075	0.1
Silver	0.002	ND	ND	0.05	NRO
Herbicides	ND	ND	ND	NA	NA
Pesticides	ND	ND	ND	NA	NA

Notes:
[1] Title 35 Illinois Administrative Code (IAC) 742, Appendix B, Table E
Numbers in **bold blue** indicate an exceedance of ROs for the Class I Soil Component of the Ground Water Ingestion Exposure Route, but below the ROs for Class II.
Numbers in **bold red** indicate an exceedance of ROs for both Class I and Class II Soil Component of the Ground Water Ingestion Exposure Route.

Acronyms:
mg/L - milligrams per liter
NA - Not applicable
ND - Not detected above laboratory reporting limits
NRO - No Remediation Objective
PAH - Polynuclear aromatic hydrocarbons
RCRA - Resource Conservation and Recovery Act
RO - Remediation Objectives
SVOC - Semivolatile organic compounds
VOC - Volatile organic compounds

Prepared by: KAB 6/12/2007
Checked by: AWB 6/21/2007

Table 4: Summary of Surface Flux Chamber Fluxes and Calculated Risk

Chamber	Compound	C_i (ug/m3)	C_f (ug/m3)	Delta C_c (ug/m3)	Time (min)	V_c (m^3)	V_s (m^3)	A_c (m^2)	Flux (Er_i) (ug/min-m^2)	A_r (m^2)	Q (m^3/min)	C_{r-e} (ug/m^3)	C_{r-a} (ug/m^3)	C_{r-e}/C_{r-a}	Risk
CCSF-35	TCE	0	34	34	780	0.0075	0.0004	0.06	0.0054	186	3.78	0.268	1	26.8%	2.68E-07
	Chloromethane	0	17	17	780	0.0075	0.0004	0.06	0.0027	186	3.78	0.134	0.81	16.6%	1.66E-07
														Total Risk:	**4.34E-07**

Definitions: C_i: initial concentration
C_f: final concentration
Delta C_c: change in chamber concentration over time
Time: Incubation Time
V_c: Chamber Volume
V_s: Summa Canister Volume
A_c: Chamber surface contact area
Flux (Er_i) : Calculated flux per equations in report text
A_r: Area of Room
Q = room ventilation rate
Cr-e: Calculated room concentration with exchange of room air
Cr-a: CA-EPA allowed room concentration for 1 in 1 million risk
Cr-e/Cr-a: Ratio of calculated to allowed in %
Risk: Calculated risk

Prepared By: MLH / 6.21.2007
Checked By: AWB / 6.21.2007

Calculations for flux and room concentration as described in tex

Ar	1.86E+06	cm2	1.86E+02	m2
HEIGHT	2.44E+02	cm	2.44E+00	M
ER	5.00E-01	per hour		
Q (0.5/hr)	6.30E+04	cm3/sec	3.78E+00	m3/min

Table 5: Monitoring Well Construction and Development Data

Monitoring Well Identification	Date Installed	Screened Interval (feet BGS)	Soil Horizon(s) Screened[1]	Materials of Construction	Date Developed	Water Column Length[2] (feet)	Well Casing Volume[3] (gallons)	Water Development Volume[4] (gallons)	Actual Development Volume[5] (gallons)
CCMW-34	6/1/2007	11.31-21.31	Sand	SCH 40 PVC	6/5/2007	8.72	1.42	7.10	8.0
CCMW-35	6/4/2007	5.29-15.29	Sand and Clay	SCH 40 PVC	6/5/2007	2.62	0.43	2.15	1.0[6]
CCMW-36	6/1/2007	7.73-17.73	Clay and Sand	SCH 40 PVC	6/5/2007	6.09	0.99	4.96	5.0

Notes:

[1]: Classification(s) of soil surrounding the screened portion of the monitoring well.
[2]: The monitoring wells were gauged by BB&J personnel on May 16 and 17, 2007 using an electronic interface probe.
[3]: Well casing volume, in gallons, is equal to the water column length x 7.48 x π x R^2, where R = water column radius (1 inch) and π = 3.14159.
[4]: Well development volume is equal to the calculated well casing volume x 5.
[5]: Approximate volume of ground water removed from monitoring well during development.
[6]: One gallon was purged out of CCMW-35 due to the inability to recharge.

Acronyms:

BGS: Below Grade Surface
MW: Monitoring Well
SCH: Schedule
PVC: Polyvinyl chloride

Prepared By/Date: MLH / 6/11/2007
Checked By/Date: AWB / 6/21/2007

Table 6: Monitoring Well and Ground-Water Elevation Data[1]

Monitoring Well Identification[2]	Date Gauged	Material Of Well Construction	Well Depth (feet TOC)	Screened Interval (feet BGS)	Depth To Ground Water (feet TOC)	Depth To Ground Water (feet BGS)	Ground Surface Elevation (feet)	Top Of Casing Elevation (feet)	Ground-Water Elevation (feet)
CCMW-34	6/5/2007	SCH 40 PVC	20.90	11.31-21.31	12.18	12.59	99.14	98.73	90.58
CCMW-35	6/5/2007	SCH 40 PVC	14.73	5.29-15.29	12.11	12.67	98.58	98.02	90.65
CCMW-36	6/5/2007	SCH 40 PVC	17.40	7.73-17.73	11.31	11.64	97.57	97.24	91.45

Notes:

[1]: Ground surface reference elevations are approximate, measured from the northern side of the well cover, conducted by BB&J.
[2]: Monitoring wells are 2 inches in diameter.

Acronyms:

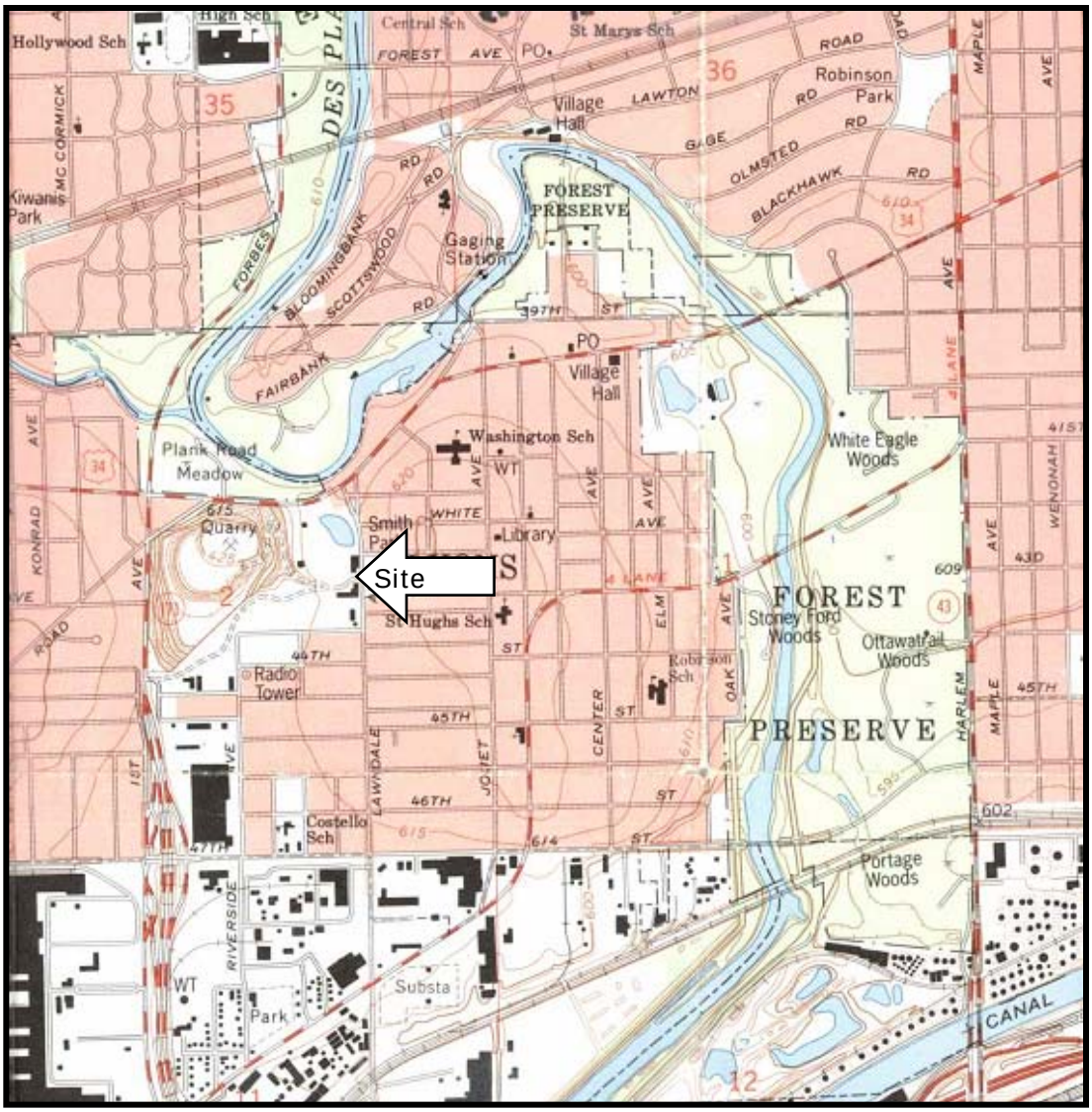
TOC: Top of Casing
BGS: Below Grade Surface
SCH: Schedule
PVC: polyvinyl chloride

Prepared By/Date: MLH / 6/11/2007
Checked By/Date: AWB / 6/21/2007

FIGURES

Source: U.S. Geological Survey Quadrangle Berwyn, Illinois. 7.5 Minute Series (Topographic), Dated 1993.
T 38N
R 12E
S 36

N



0 1/4 1/2 1 MILE

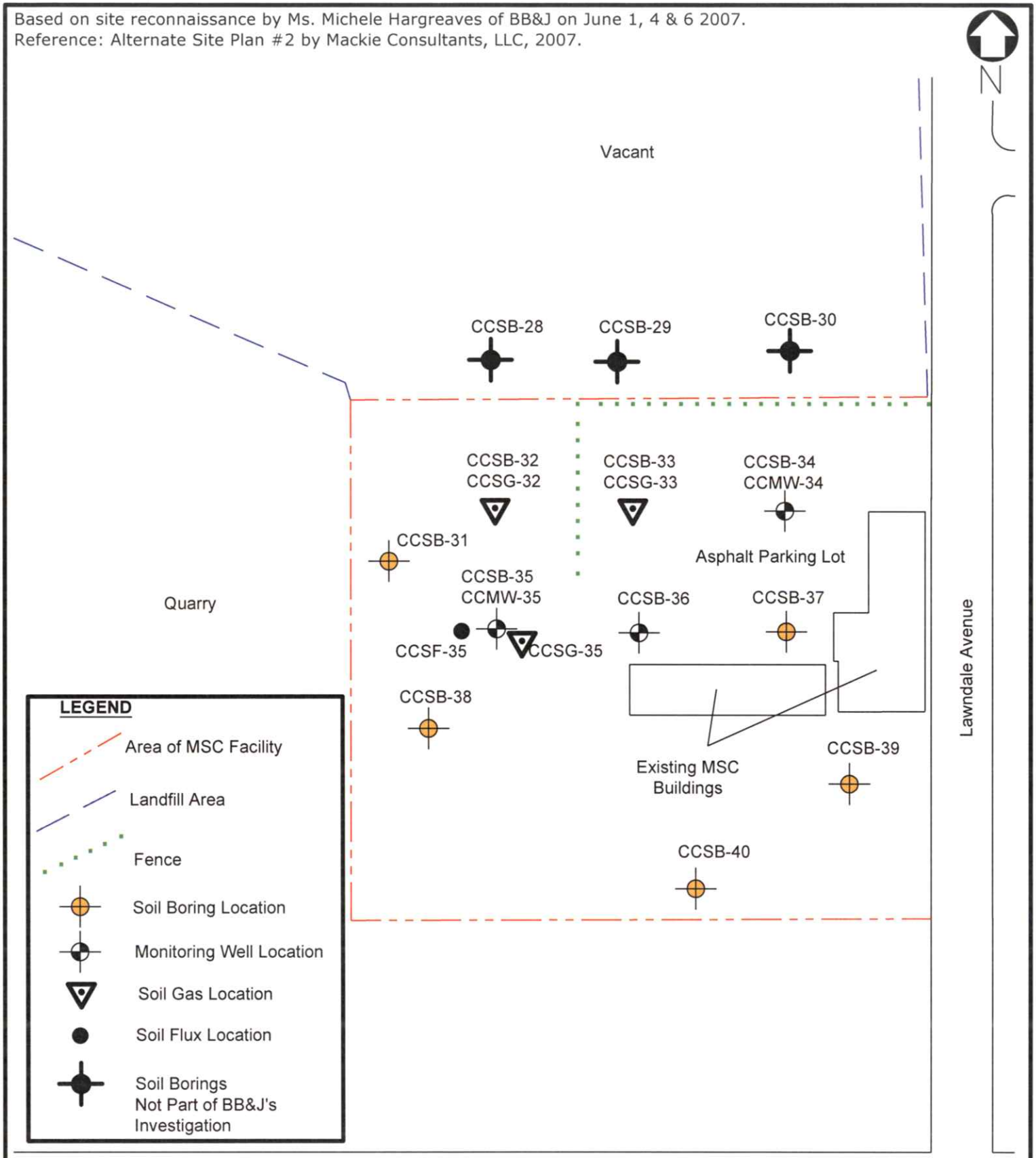
0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: MLH / 6.11.2007
Checked by/Date: AWB / 6.21.2007

Village of Lyons, IL Southwest Corner of Ogden & Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project 0254601 Figure 1

Based on site reconnaissance by Ms. Michele Hargreaves of BB&J on June 1, 4 & 6 2007.
Reference: Alternate Site Plan #2 by Mackie Consultants, LLC, 2007.

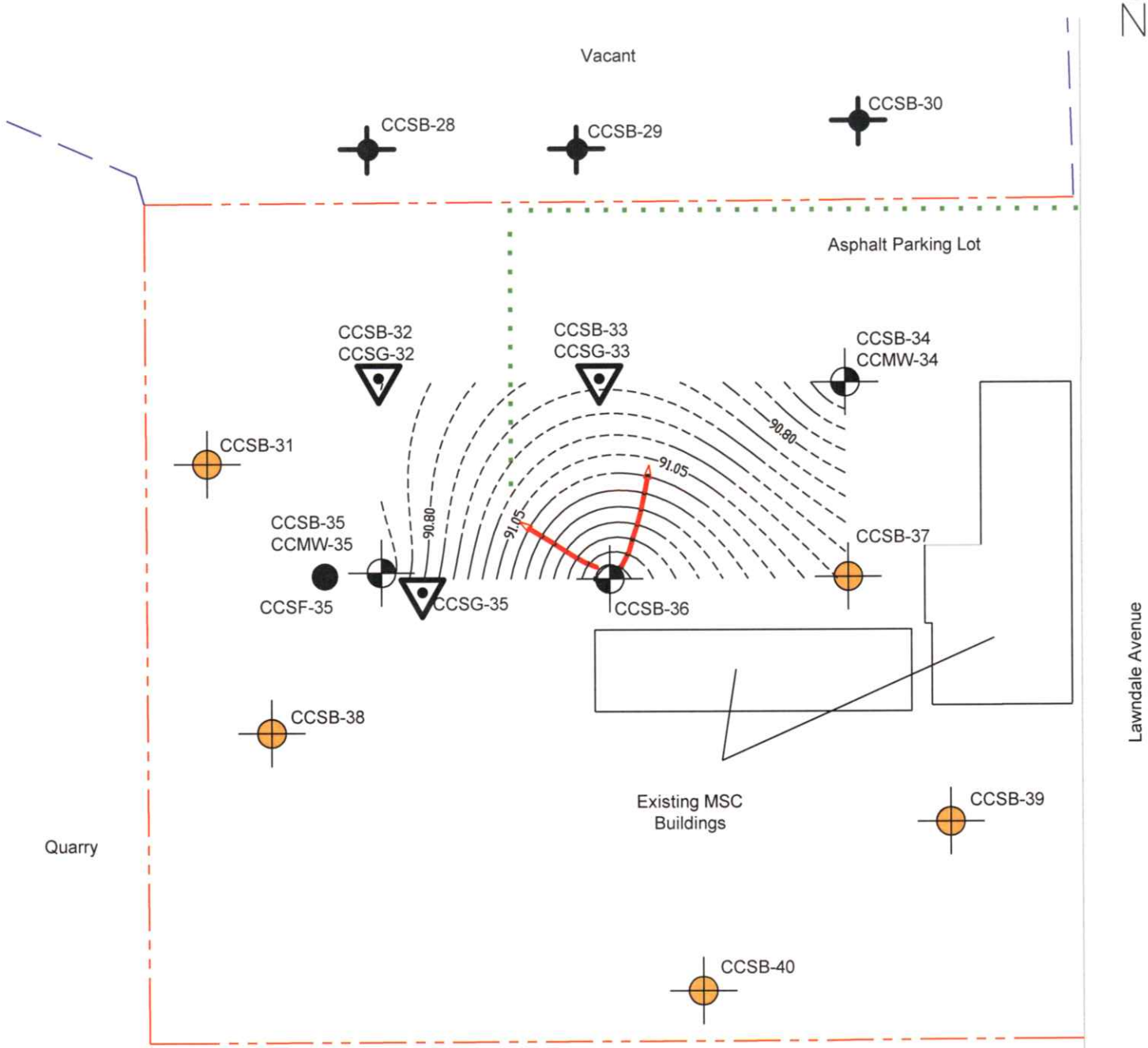


NOT TO SCALE

Prepared by/Date: MLH /6.11.2007
Checked by/Date: AWB /6.21.2007

Village of Lyons, IL Southwest Corner of Ogden & Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site & Vicinity Plan Project No. 0254601 Figure 2

Based on site reconnaissance by Ms. Michele Hargreaves of BB&J on June 1, 4 & 6 2007.
Reference: Alternate Site Plan #2 by Mackie Consultants, LLC, 2007.



LEGEND

- Area of MSC Facility
- Landfill Area
- Fence
- 90.00 — Relative Ground-water Elevation. Dashed Where Inferred.
- Interpreted Ground-water Flow
- Monitoring Well Location
- Soil Boring Location
- Soil Gas Location
- Soil Flux Location
- Soil Borings Not Part of BB&J's Investigation

Note: Ground-water excavations collected on June 5, 2007.

NOT TO SCALE

Prepared by/Date: MLH /6.11.2007
Checked by/Date: AWB /6.21.2007

Village of Lyons, IL Southwest Corner of Ogden & Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Ground-water Potentiometric Map Project No. 0254601 Figure 3

APPENDIX A

FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

The media targeted by this subsurface assessment and the sampling methods and protocol are described in this appendix.

A.1 Sampling Equipment

The following sampling equipment was used during field activities at the Subject Property:

- Geoprobe® direct-push technology (DPT) sampling equipment
- Rig utilizing a 6.25" auger, split spoon samplers, and capable of air rotary drilling;
- A photo-ionization detector (PID), equipped with an 10.6 electron volt (eV) lamp for field-screening soil samples and for health and safety air monitoring;
- Clean, plastic "Ziplock" bags for use in describing soil samples and for field screening purposes;
- Laboratory-supplied containers for the collection of soil and ground-water samples targeted for laboratory analyses;
- Electronic interface probe for determining depth to ground water and depth to bottom of monitoring well;
- Phosphate-free soap, potable water and distilled water for equipment cleaning;
- Laboratory-supplied deionized water (purge water) for the preparation of quality assurance/quality control (QA/QC) samples;
- Disposable latex and/or nitrile gloves;
- One 55-gallon drum used to collect purge water from permanent monitoring wells;
- Sample shipping containers (e.g., coolers); and,
- Sealed trip blanks, prepared by the laboratory using deionized water and shipped with the sample coolers.

A.2 Soil probe/Soil Probe Advancement and Soil Sampling Procedures

This section describes the various types of soil probe and/or soil probe techniques that were used, as well as specific soil sample collection procedures.

A.2.1 Hollow Stem Auger Procedures

Soil samples are collected using a 1.5-inch diameter, 18-inch steel sampling hollow stem auger. A hydraulic auger, attached to a truck, is used to drill to a desired depth, then a split spoon barrel (SSB) is advanced to the desired depth and a discrete sample is collected.

A.2.2 Soil Sample Screening and Collection Procedures

Upon retrieval, the soil sample was removed from the sampler and visually classified by field personnel. Each soil sample was split into two portions and placed in re-sealable plastic bags. One bag was placed into a cooler with ice, and the other was kept in a warm environment (approximately 70 degrees Fahrenheit or greater) for approximately 10 minutes in an effort to promote volatilization of potential organic vapors within the soil.

After approximately 10 minutes, headspace screening using a PID was performed on the soil sample kept in the warm environment. The PID was calibrated daily in accordance with the manufacturer's directions. After a minimum of 10 minutes within a warm environment, the probe on the PID was inserted into the soil bag, and a sample of headspace air was withdrawn. The maximum reading was recorded in the field book and/or on the soil probe log. Readings were recorded in parts per million, referencing the calibration gas used.

Based on field screening and visual observations, field personnel selected a "worst case" soil sample from each location generally based on the following criteria:

- The soil sample that exhibited the highest PID screening results; and/or,
- Appeared to exhibit the most prominent staining; and/or,
- Exhibited the strongest potential chemical odor (or, in the absence of an apparent chemical odor, the strongest anomalous odor, as noted).

The selected soil sample's corresponding soil bag contained in the cooler on ice was then packed in the appropriate laboratory-supplied containers for shipment to the laboratory for chemical analysis.

The soil contained in the soil bag used for field screening also was used for classification. The soil was visually classified by the on-site field personnel in accordance with American Society for Testing and Materials (ASTM) D 2488-93 and described on the appropriate field sampling form(s).

A.2.3 Ground-Water Sample Collection Procedures

Monitoring well covers are removed using a socket wrench. Prior to sampling, ground water is purged from each permanent monitoring well using a 1.5-inch by 3.5-foot plastic, disposable bailer. The purged water is put into a 5-gallon bucket and ultimately disposed of in a 55-gallon drum and treated as waste. Upon collection, the ground-water samples are placed into pre-cleaned, laboratory-supplied containers with the proper preservative(s). Sampling was performed wearing clean, disposable latex or nitrile gloves.

A.2.4 Soil Flux Chambers

Soil flux chambers are utilized to collect soil gas escaping from the ground surface. The flux chamber is placed on the ground and soil is packed around the flux chamber edges to create an air-tight environment inside the flux chambers. An "initial" soil flux sample of ambient air within the flux chamber is collected for each soil flux location by directly connecting a 400-mL Summa canister to the soil flux chamber. The valve is opened on the 400-mL canister and the reading on the vacuum gauge is recorded. If the gauge read at least -25 inches of mercury, the canister is allowed to fill. When the gauge read zero inches of mercury, the canister is disconnected. After a minimum of eight hours of allowing the flux chamber to equilibrate, BB&J resamples the flux chamber by again connecting the 400-mL Summa canisters to the flux chamber.

A.3 Probehole Abandonment

Following the advancement of the soil probes, the probeholes were backfilled with bentonite chips to approximately 6 inches below ground surface (bgs) inside the Subject Property. The surface above the probehole was then patched with asphalt or concrete, as necessary, to restore the original surface.

A.4 Quality Assurance/Quality Control

The following sections outline QA/QC protocol, sample containers, sample preservation, sample identification and chain-of-custody procedures implemented during sampling activities.

A.4.1 QA/QC Samples

Trip Blanks

Trip blank samples that consisted of de-ionized water, provided by the analytical laboratory, accompanied the cooler(s) containing the samples from the laboratory, to the field and back to the laboratory. The trip blanks were used to assess potential cross-contamination from the cooler and handling practices, in addition to assessing potential cross-contamination between samples. Trip blanks will be analyzed for BTEX only. One trip blank will be analyzed per cooler.

Equipment Rinsates

Equipment rinsates were collected to evaluate potential cross-contamination of samples during equipment cleaning procedures. The frequency of equipment rinsates was either one per every 20 samples of a particular media sampled (e.g., soil, ground water, etc.) or one for each type of sampling equipment used. The equipment rinsates were collected by pouring deionized water provided by the laboratory over the sampling equipment and into sample containers. The equipment rinsates were shipped with the soil and/or ground-water samples collected that day and were analyzed for the same suite of potential constituents of concern (COCs) as the environmental samples.

A.4.2 Sample Containers and Preservation

Sample containers prepared by a commercial vendor were provided by the laboratory.

A.4.3 Sample Identification

Prior to sample collection, the appropriate container (with preservative, if applicable) was labeled with the following information:

- Sample identification;
- Initials of collector;
- Date and time of collection;
- Analytical parameters requested; and,
- Preservative used.

Samples were packed in coolers (with containerized ice) complete with custody seals and transported via overnight courier to the laboratory. Chain-of-custody documentation outlined as follows accompanied each shipment of samples to the laboratory.

A.4.4 Chain-of-Custody Procedures

Chain-of-custody began when the pre-cleaned sample containers arrived in the field in coolers with signed and dated custody seals. At the time of sample collection, the labeled samples were placed into an iced cooler. A line-item chain-of-custody form was then completed by the sampler. Chain-of-custody allowed the samples to be traced from the time of collection to their receipt in the laboratory. Upon completion of all line items, the sampler signed, dated, listed the time, and checked the completeness of all descriptive information contained on the form. One copy of the completed chain-of-custody was retained by the sampler. Each individual who subsequently assumed responsibility for the samples signed the chain-of-custody record. The following items were included on the chain-of-custody form:

- Sample identification;
- Signature of sampler;
- Date and time of collection;
- Sample type (i.e., aqueous or soil);
- Sample location;
- Number, size, and type of containers;
- Analytical parameters requested;
- Preservative (where applicable);
- Signatures of personnel involved in the chain of possession; and,
- Dates and times of relinquishment and receipt.

A.5 Cleaning and Disposal of Investigation-Derived Wastes (IDW)

Cleaning procedures were employed to minimize the potential for cross-contamination, off-site migration of potential COCs, and personal exposure to COCs. Solid materials and fluids generated during site assessment activities were containerized on-site. The following sections summarize cleaning procedures and disposal of IDW.

A.5.1 Equipment Cleaning

Equipment involved in field sampling activities was cleaned prior to probehole advancement, sampling, or leaving the Subject Property. During soil sampling, cleaning of the sampling equipment was conducted between each sample interval and included the following:

- Removal of visible sediment using brush and non-phosphate soap and potable water mixture; and,
- Potable water rinse.

A.6 Record Keeping

BB&J field personnel documented the field activities (with corresponding times) and pertinent information in a dedicated project filed logbook. Information that was recorded included: the names and companies of on-site personnel (BB&J, client, subcontractors, etc), weather conditions, and the purpose of activities and details of the fieldwork (e.g., soil conditions, sampling depths, etc.).

APPENDIX B

SOIL BORING LOGS

Field Boring Log

Site File No.	10407 - 0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-28	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	30 feet
Auger Depth	28.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D- Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Soft brown clay; damp		1	A						
2			2							
2	FILL: Loose gray sand; dry		3	B						
4			4							
5	FILL: Loose black asphalt; dry		5	C						
6			6							
7			7	D						
8			8							
9	FILL: Loose gray/black sand; dry		9	E						
10			10							
11			11	F						
12			12							
13			13	G						
14	Soft black/brown CLAY (CL) trace black asphalt; damp		14							
15			15	H						
16	Medium stiff brown CLAY (CL); damp		16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-28	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	30 feet
Auger Depth	28.5 Feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	Medium stiff brown CLAY (CL); damp		21	A						
22			22							
23			23	B						
24	No Recovery		24							
25			25	C						
26	Stiff black/brown CLAY (CL); dry		26							Pieces of black charcoal observed within the soil
27			27	D						
28			28							
29			29	E						
30			30							
31	Boring terminated at 30ft BGS, per proposal		31	F						Boring terminated at 30ft BGS, per proposal
32			32							
33			33	G						
34			34							
35			35	H						
36			36							
37			37	I						
38			38							
39			39	J						
40			40							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-29	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	16 feet
Auger Depth	14.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

**NGVD: National Geodetic Vertical Datum

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Soft brown clay with gravel; moist		1	A						
2			2							
2	FILL: Loose, gray gravel; dry		3	B						
4			4							
5	FILL: Loose black asphalt; dry		5	C						
6			6							
7	Dense brown SAND (SP); damp		7	D						
8			8							
9			9	E						
10			10							
11			11	F						
12			12							
13			13	G						
14			14							
15	Dense gray SAND (SP); wet		15	H						
16			16							
17	Auger Refusal at 16 feet bgs		17	I						Auger Refusal (Believed to be bedrock)
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10408 - 0253801	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		
UTM (or State Plane) Coordinates			
N. (x)		E.(y)	
Latitude	41 ° 48 ' 53 "	Longitude	87 ° 49 ' 38 "
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Boring No.	CCSB-30	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	22 feet
Auger Depth	20.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

**NGVD: National Geodetic Vertical Datum

BB&J Personnel

G - Michele Hargreaves, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Soft brown clay; damp		1	A						
2			2							
2	FILL: Loose gray gravel; dry		3	B						
4			4							
5			5	C						
6			6							
7	Dense brown SAND (SP); moist		7	D						
8			8							
9			9	E						
10			10							
11			11	F						
12			12							
13			13	G						
14			14							
15	Dense gray SAND (SP); wet		15	H						
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10407-0254601 County Cook	Boring No.	SB-7
Site File Name	4226 Lawndale Avenue - Lyons, IL	Surface Elev.	N/A
Fed ID No.		Auger Depth	20.5 feet
Quadrangle	Berwyn, IL	Date Started	6/4/2007

Monitor Well No.	N/A
Completion Depth	22 feet
Rotary Depth	N/A
Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	Dense gray SAND (SP); wet		21	A						Auger Refusal (Believed to be bedrock)
22			22							
	Auger Refusal at 22 feet bgs									
23			23	B						
24			24							
25			25	C						
26			26							
27			27	D						
28			28							
29			29	E						
30			30							
31			31	F						
32			32							
33			33	G						
34			34							
35			35	H						
36			36							
37			37	I						
38			38							
39			39	J						
40			40							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		
UTM (or State Plane) Coordinates			
N. (x)		E.(y)	
Latitude	41 ° 48 ' 53 "	Longitude	87 ° 49 ' 38 "
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Boring No.	CCSB-31	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	10 feet
Auger Depth	8.5 feet	Rotary Depth	N/A
Date Started	6/1/2007	Date Finished	6/1/2007

**NGVD: National Geodetic Vertical Datum

BB&J Personnel

G - Michele Hargreaves, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	Loose brown SAND (SW) with gravel; moist		1	A	G					
2			2			18			0.3	
2			3	B	G					
4	No Recovery		4			18				
5			5	C	G					
6	Stiff brown CLAY (CL); dry		6							
7			7	D	G	18			0.2	Slight Petroleum Oder Sample submitted for laboratory analysis (6 - 7.5 feet BGS)
8			8							
9			9	E	G	18			0.2	Sample submitted for laboratory analysis (8.5 - 10 feet BGS)
10			10							
11	Boring terminated at 10ft BGS, per proposal		11	F	G					
12			12							
13			13	G	G					
14			14							
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

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Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		
UTM (or State Plane) Coordinates			
N. (x)		E.(y)	
Latitude	41 ° 48 ' 53 "	Longitude	87 ° 49 ' 38 "
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Boring No.	CCSB-32	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	10 feet
Auger Depth	8.5 feet	Rotary Depth	N/A
Date Started	6/1/2007	Date Finished	6/1/2007

**NGVD: National Geodetic Vertical Datum

BB&J Personnel

G - Michele Hargreaves, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Soft brown/gray sandy clay some gravel; moist		1	A	G					
2			2			18			0.2	Sample submitted for laboratory analysis (1 - 2.5 feet BGS)
2			3	B	G					
4	FILL: Loose black/gray asphalt with pieces of red and yellow brick; dry		4							
5			5	C	G	18			0.1	Sample submitted for laboratory analysis (3.5 - 5 feet BGS)
6			6							
7	Soft brown sandy CLAY (CL) some gravel; moist		7	D	G	18			0.0	
8			8							
9	No Recovery		9	E	G					
10			10							
11	Auger Refusal at 10ft bgs		11	F	G					Auger Refusal (Believed to be concrete)
12			12							
13			13	G	G					
14			14							
15			15	H	G					
16			16							
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Copyright: Bradburne, Briller & Johnson, LLC Version 1.0 10/25/06

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-33	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	16 feet
Auger Depth	14.5 feet	Rotary Depth	N/A
Date Started	6/1/2007	Date Finished	6/1/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	Asphalt									
1	Concrete		1	A	G					
2			2			12			0.3	
2	Loose gray GRAVEL (GW); dry		3	B	G					
4			4							
5	Stiff brown CLAY (CL) trace gravel; damp		5	C	G	18			0.8	Sample submitted for laboratory analysis (3.5 - 5 feet BGS)
6			6							
7	Stiff brown CLAY (CL); damp		7	D	G	18			0.1	
8			8							
9			9	E	G	18			1.0	
10			10							
11			11	F	G					
12			12							
13	Dense brown SAND (SP); wet		13	G	G					
14			14							Sample submitted for laboratory analysis (13.5 - 15 feet BGS) Unusual petroleum oder
15			15	H	G	18			10.3	
16			16							
17	Auger Refusal at 16 feet BGS		17	I						Auger Refusal (Believed to be bedrock)
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601 County Cook	Boring No.	CCSB-34
Site File Name	4226 Lawndale Avenue - Lyons, IL	Surface Elev.	N/A
Fed ID No.		Auger Depth	19.5 feet
Quadrangle	Berwyn, IL	Date Started	6/1/2007
UTM (or State Plane) Coordinates		**NGVD:	National Geodetic Vertical Datum
N. (x)	E.(y)		
Latitude	41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "		
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Monitor Well No.	N/A
Completion Depth	21 feet
Rotary Depth	N/A
Date Finished	6/1/2007

BB&J Personnel

G - Michele Hargreaves, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	Asphalt									
1	Concrete		1	A	G					
2	Loose gray GRAVEL (GW); dry		2			18			1.7	
2			3	B	G					
4	No Recovery		4			18				
5			5	C	G					
6	Stiff brown CLAY (CL); damp		6							
7			7	D	G	18			2.0	Sample submitted for laboratory analysis (6 - 7.5 feet BGS)
8			8							
9	Dense orange SAND (SP); wet		9	E	G	18			1.2	
10			10							
11	Dense brown SAND (SP); wet		11	F	G					
12			12							
13			13	G	G					
14			14			18			1.0	
15			15	H	G					
16			16							
17			17	I	G					
18			18							
19	Dense gray SAND (SP); wet		19	J	G	18			47.0	Sample submitted for laboratory analysis (18.5 - 20 feet BGS)
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-34	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	21 feet
Auger Depth	19.5 feet	Rotary Depth	N/A
Date Started	6/1/2007	Date Finished	6/1/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	Dense gray SAND (SP); wet		21	A						Auger Refusal (Believed to be bedrock)
22	Auger Refusal at 21feet BGS		22							
23			23	B						
24			24							
25			25	C						
26			26							
27			27	D						
28			28							
29			29	E						
30			30							
31			31	F						
32			32							
33			33	G						
34			34							
35			35	H						
36			36							
37			37	I						
38			38							
39			39	J						
40			40							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-35	Monitor Well No.	CCMW-35
Surface Elev.	N/A	Completion Depth	15 feet
Auger Depth	13.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) _____ E.(y) _____

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Soft gray/brown clay with gravel; moist		1	A	G					
2			2			6			0.2	
2	FILL: Soft black clay; damp		3	B	G					Sample submitted for laboratory analysis (1 - 5 feet BGS)
4			4			6			1.7	Shinny gray flecks in soil
5			5	C	G					
6	FILL: Loose brown sand; damp		6							
7			7	D	G	18			0.0	
8	Stiff brown CLAY (CL); moist		8							
9			9	E	G	18			0.0	
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14	Dense gray SAND (SP); moist		14			18			0.0	Sample submitted for laboratory analysis (13.5 - 15 feet BGS)
15			15	H	G					
16	Auger Refusal at 15 feet BGS		16							Auger Refusal (Believed to be bedrock)
17			17	I						
18			18							
19			19	J						
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601 County Cook	Boring No.	CCSB-36
Site File Name	4226 Lawndale Avenue - Lyons, IL	Surface Elev.	N/A
Fed ID No.		Auger Depth	17 feet
Quadrangle	Berwyn, IL	Date Started	6/1/2007
Monitor Well No.	N/A	Completion Depth	18.5 feet
Rotary Depth	N/A	Date Finished	6/1/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
1	FILL: Loose gray gravel; wet		1	A	G					
2			2			18			0.1	
3	Stiff brown CLAY (CL); damp		3	B	G					
4			4			18			0.1	Sample submitted for laboratory analysis (3.5 - 5 feet BGS)
5			5	C	G					
6			6							
7			7	D	G	18			0.1	
8			8							
9	Dense brown SAND (SP); wet		9	E	G	18			0	
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14			14							Sample submitted for laboratory analysis (13.5 - 15 feet BGS)
15			15	H	G	18			26	
16			16							
17			17	I						
18			18							Groundwater encountered at 18 ft
19	Auger Refusal at 18.5 feet BGS		19	J						Auger Refusal (Believed to be bedrock)
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601 County Cook	Boring No.	CCSB-37
Site File Name	4226 Lawndale Avenue - Lyons, IL	Surface Elev.	N/A
Fed ID No.		Auger Depth	19.5 feet
Quadrangle	Berwyn, IL	Date Started	6/4/2007
UTM (or State Plane) Coordinates		**NGVD:	National Geodetic Vertical Datum
N. (x)	E.(y)		
Latitude	41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "		
Boring Location	See Figure		
Drilling Equipment	Hollow Stem Auger		

Monitor Well No.	N/A
Completion Depth	21 feet
Rotary Depth	N/A
Date Finished	6/4/2007

BB&J Personnel

G - Michele Hargreaves, BB&J
D - Nick, HH Holmes
D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	Asphalt									
1	Concrete		1	A	G					
2			2			18			0.0	
2	FILL: Loose gray gravel; dry		3	B	G					
4	Loose brown SAND (SW); moist		4			18			0.0	Sample submitted for laboratory analysis (3.5 - 5 feet BGS)
5	Stiff brown CLAY (CL) trace gravel; damp		5	C	G					
6			6							
7			7	D	G	18			0.0	
8			8							
9	Dense brown SAND (SP); moist		9	E	G	18			0.0	
10			10							
11			11	F	G					
12			12							
13			13	G	G					
14			14			18			0.1	Sample submitted for laboratory analysis (13.5 - 15 feet BGS) Groundwater encounted at 15ft bgs
15			15	H	G					
16	Dense gray SAND (SP); wet		16							
17			17	I	G					
18			18							
19	Loose gray SAND (SW), some gravel; wet		19	J	G	18			0.0	
20			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-37	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	21 feet
Auger Depth	19.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Depth in Feet	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLES: SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
21	Loose gray SAND (SW) some gravel; wet		21	A						Auger Refusal (Believed to be bedrock)
22	Auger Refusal at 21 feet BGS		22							
23			23	B						
24			24							
25			25	C						
26			26							
27			27	D						
28			28							
29			29	E						
30			30							
31			31	F						
32			32							
33			33	G						
34			34							
35			35	H						
36			36							
37			37	I						
38			38							
39			39	J						
40			40							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County	Cook
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-38	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	10 feet
Auger Depth	8.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Elev	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	FILL: Soft brown sandy clay, some gravel; damp		1	A	G					Sample submitted for laboratory analysis (1 - 3.5 feet BGS)
			2			18			0.0	
			3	B	G					
			4			18			0.0	
	Stiff brown CLAY (CL); moist		5	C	G					
			6							
			7	D	G	18			0.0	Sample submitted for laboratory analysis (6 - 7.5 feet)
			8							
	No Recovery		9	E	G	0				Bedrock encountered at 10ft bgs
			10							
	Boring terminated at 10ft, per proposal		11	F	G					
			12							
			13	G	G					
			14							
			15	H	G					
			16							
			17	I						
			18							
			19	J		18				
			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County	Cook
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-39	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	10 feet
Auger Depth	8.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Elev	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	FILL: Loose black/gray gravel; damp		1	A	G					
			2			4			2.9	
			3	B	G					
			4			18			0.1	Sample submitted for laboratory analysis (3.5 - 5 feet BGS)
	Stiff brown CLAY (CL); moist		5	C	G					
			6							
	Dense brown SAND (SP); moist		7	D	G	18			0.1	
			8							
			9	E	G	18			0.2	Sample submitted for laboratory analysis (8.5 - 10 feet BGS)
			10							
	Boring terminated at 10ft, per proposal		11	F						
			12							
			13	G						
			14							
			15	H						
			16							
			17	I						
			18							
			19	J		18				
			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

Field Boring Log

Site File No.	10407-0254601	County Cook	
Site File Name	4226 Lawndale Avenue - Lyons, IL		
Fed ID No.			
Quadrangle	Berwyn, IL		

Boring No.	CCSB-40	Monitor Well No.	N/A
Surface Elev.	N/A	Completion Depth	10 feet
Auger Depth	8.5 feet	Rotary Depth	N/A
Date Started	6/4/2007	Date Finished	6/4/2007

UTM (or State Plane) Coordinates

**NGVD: National Geodetic Vertical Datum

N. (x) E.(y)

Latitude 41 ° 48 ' 53 " Longitude 87 ° 49 ' 38 "

Boring Location See Figure

Drilling Equipment Hollow Stem Auger

BB&J Personnel

G - Michele Hargreaves, BB&J

D - Nick, HH Holmes

D - Mike, HH Holmes

Elev	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	SAMPLE ID	SAMPLE TYPE	SAMPLE RECOVERY (IN)	PENETROMETER	N VALUES (BLOW COUNTS)	OVA OR PID READINGS (PPM)	REMARKS
	Soft brown clay FILL with gravel; moist		1	A	G					Sample submitted for laboratory analysis (1 - 2.5 feet BGS)
			2			18			0.0	
	Loose brown /black gravel FILL; wet		3	B	G					
			4			18			0.0	
			5	C	G					
			6							
	Dense brown SAND (SP); moist		7	D	G	18			0.0	
			8							
	Stiff brown CLAY (CL); moist		9	E	G	18			0.0	Sample submitted for laboratory analysis (8.5 - 10 feet BGS)
			10							
	Boring terminated at 10ft, per proposal		11	F						
			12							
			13	G						
			14							
			15	H						
			16							
			17	I						
			18							
			19	J		18				
			20							

NOTES:

NA: Not Applicable	G: Grab	PTR: Penetrometer	P: Damp	S: Saturated
No: Number	C: Composite	ppm: parts per million	M: Moist	OV: Organic Vapors
NM: Not Measured	bgs: below ground surface	D: Dry	W: Wet	
Elev: Elevation	Fed: Federal	ID: Identification	H: Helper	Groundwater

APPENDIX C

LABORATORY ANALYTICAL REPORTS

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

June 12, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons, Landfill
First Environmental File ID: 7-2475
Date Received: June 04, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons, Landfill**

First Environmental File ID: **7-2475**

Date Received: **June 04, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

Method Comments

Lab Number	Sample ID	Comments:
7-2475-003	CCSB-36 (13.5-15ft)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2475-008	CCSB-32 (3.5-5ft)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2475-009	CCSB-32 (1-2.5ft)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2475-011	CCSB-33 (13.5-15ft)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	0:00
Sample ID:	Trip Blank	**Date Received:**	06/04/07
Sample No:	7-2475-001	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (3.5-5ft)
Sample No: 7-2475-002

Date Collected: 06/01/07
Time Collected: 15:45
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	79.35		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (3.5-5ft)
Sample No: 7-2475-002

Date Collected: 06/01/07
Time Collected: 15:45
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/05/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	259	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (3.5-5ft)
Sample No: 7-2475-002

Date Collected: 06/01/07
Time Collected: 15:45
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/05/07		**Preparation Method 3540C** Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	448	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (3.5-5ft)
Sample No: 7-2475-002

Date Collected: 06/01/07
Time Collected: 15:45
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/05/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (3.5-5ft)
Sample No: 7-2475-002

Date Collected: 06/01/07
Time Collected: 15:45
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		5.8	0.2	mg/kg	
Barium		80.2	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		18.0	0.1	mg/kg	
Lead		10.8	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.80		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (13.5-15ft)
Sample No: 7-2475-003

Date Collected: 06/01/07
Time Collected: 15:50
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	82.52		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (13.5-15ft)
Sample No: 7-2475-003

Date Collected: 06/01/07
Time Collected: 15:50
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/05/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (13.5-15ft)
Sample No: 7-2475-003

Date Collected: 06/01/07
Time Collected: 15:50
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/05/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	2,360	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (13.5-15ft)
Sample No: 7-2475-003

Date Collected: 06/01/07
Time Collected: 15:50
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 06/05/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 06/12/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-36 (13.5-15ft)
Sample No: 7-2475-003

Date Collected: 06/01/07
Time Collected: 15:50
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		2.2	0.2	mg/kg	
Barium		5.1	0.1	mg/kg	
Cadmium		0.1	0.1	mg/kg	
Chromium		3.2	0.1	mg/kg	
Lead		1.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.33		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (6-7.5ft)
Sample No: 7-2475-004

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	80.75		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (6-7.5ft)
Sample No: 7-2475-004

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (6-7.5ft)
Sample No: 7-2475-004

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (6-7.5ft)
Sample No: 7-2475-004

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (6-7.5ft)
Sample No: 7-2475-004

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		19.3	0.2	mg/kg	
Barium		70.1	0.1	mg/kg	
Cadmium		0.7	0.1	mg/kg	
Chromium		17.3	0.1	mg/kg	
Lead		20.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.70		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (18.5-20ft)
Sample No: 7-2475-005

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	81.53		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/07/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (18.5-20ft)
Sample No: 7-2475-005

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/07/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (18.5-20ft)
Sample No: 7-2475-005

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (18.5-20ft)
Sample No: 7-2475-005

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-34 (18.5-20ft)
Sample No: 7-2475-005

Date Collected: 06/01/07
Time Collected: 15:55
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		4.7	0.2	mg/kg	
Barium		9.2	0.1	mg/kg	
Cadmium		123	0.1	mg/kg	
Chromium		4.7	0.1	mg/kg	
Lead		3.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.46		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (8.5-10ft)
Sample No: 7-2475-006

Date Collected: 06/01/07
Time Collected: 16:00
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	85.12		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (8.5-10ft)
Sample No: 7-2475-006

Date Collected: 06/01/07
Time Collected: 16:00
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (8.5-10ft)
Sample No: 7-2475-006

Date Collected: 06/01/07
Time Collected: 16:00
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/06/07		**Preparation Method 3540C** Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (8.5-10ft)
Sample No: 7-2475-006

Date Collected: 06/01/07
Time Collected: 16:00
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (8.5-10ft)
Sample No: 7-2475-006

Date Collected: 06/01/07
Time Collected: 16:00
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		10.8	0.2	mg/kg	
Barium		31.0	0.1	mg/kg	
Cadmium		0.4	0.1	mg/kg	
Chromium		17.0	0.1	mg/kg	
Lead		16.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.64		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (6-7.5ft)
Sample No: 7-2475-007

Date Collected: 06/01/07
Time Collected: 16:10
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	89.44		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	6.3	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (6-7.5ft)
Sample No: 7-2475-007

Date Collected: 06/01/07
Time Collected: 16:10
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (6-7.5ft)
Sample No: 7-2475-007

Date Collected: 06/01/07
Time Collected: 16:10
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (6-7.5ft)
Sample No: 7-2475-007

Date Collected: 06/01/07
Time Collected: 16:10
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-31 (6-7.5ft)
Sample No: 7-2475-007

Date Collected: 06/01/07
Time Collected: 16:10
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		2.1	0.2	mg/kg	
Barium		49.9	0.1	mg/kg	
Cadmium		< 0.1	0.1	mg/kg	
Chromium		14.8	0.1	mg/kg	
Lead		5.4	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.81		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (3.5-5ft)
Sample No: 7-2475-008

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	93.64		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	125	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (3.5-5ft)
Sample No: 7-2475-008

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	855	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	1,920	330	ug/kg	
Benzo(a)pyrene	2,010	90	ug/kg	
Benzo(b)fluoranthene	2,430	330	ug/kg	
Benzo(k)fluoranthene	1,290	330	ug/kg	
Benzo(ghi)perylene	969	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	401	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	1,940	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	324	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (3.5-5ft)
Sample No: 7-2475-008

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	2,730	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	978	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	473	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	3,080	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	1,440	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	2,630	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (3.5-5ft)
Sample No: 7-2475-008

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (3.5-5ft)
Sample No: 7-2475-008

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		10.6	0.2	mg/kg	
Barium		218	0.1	mg/kg	
Cadmium		3.1	0.1	mg/kg	
Chromium		84.6	0.1	mg/kg	
Lead		121	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		0.5	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		0.20	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.94		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (1-2.5ft)
Sample No: 7-2475-009

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	92.41		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (1-2.5ft)
Sample No: 7-2475-009

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	943	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	981	330	ug/kg	
Benzo(a)pyrene	901	90	ug/kg	
Benzo(b)fluoranthene	879	330	ug/kg	
Benzo(k)fluoranthene	890	330	ug/kg	
Benzo(ghi)perylene	448	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	373	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	987	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	147	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (1-2.5ft)
Sample No: 7-2475-009

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	1,720	330	ug/kg	
Fluorene	402	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	434	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	5,770	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	1,840	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	1,860	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (1-2.5ft)
Sample No: 7-2475-009

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 06/06/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 06/12/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-32 (1-2.5ft)
Sample No: 7-2475-009

Date Collected: 06/01/07
Time Collected: 16:15
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		10.1	0.2	mg/kg	
Barium		71.5	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		26.3	0.1	mg/kg	
Lead		369	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.15		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (3.5-5ft)
Sample No: 7-2475-010

Date Collected: 06/01/07
Time Collected: 16:20
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	85.08		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 10.0	10.0	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 5.0	5.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (3.5-5ft)
Sample No: 7-2475-010

Date Collected: 06/01/07
Time Collected: 16:20
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (3.5-5ft)
Sample No: 7-2475-010

Date Collected: 06/01/07
Time Collected: 16:20
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (3.5-5ft)
Sample No: 7-2475-010

Date Collected: 06/01/07
Time Collected: 16:20
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (3.5-5ft)
Sample No: 7-2475-010

Date Collected: 06/01/07
Time Collected: 16:20
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		6.2	0.2	mg/kg	
Barium		99.2	0.1	mg/kg	
Cadmium		0.4	0.1	mg/kg	
Chromium		19.5	0.1	mg/kg	
Lead		9.0	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.81		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (13.5-15ft)
Sample No: 7-2475-011

Date Collected: 06/01/07
Time Collected: 16:25
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/04/07				
Total Solids	81.41		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	10.0	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	5.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (13.5-15ft)
Sample No: 7-2475-011

Date Collected: 06/01/07
Time Collected: 16:25
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/06/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (13.5-15ft)
Sample No: 7-2475-011

Date Collected: 06/01/07
Time Collected: 16:25
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/06/07		Preparation Date: 06/04/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	1,650	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (13.5-15ft)
Sample No: 7-2475-011

Date Collected: 06/01/07
Time Collected: 16:25
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 06/06/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 06/04/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 06/12/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 06/04/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons, Landfill
Sample ID: CCSB-33 (13.5-15ft)
Sample No: 7-2475-011

Date Collected: 06/01/07
Time Collected: 16:25
Date Received: 06/04/07
Date Reported: 06/12/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/06/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/08/07			Preparation Date: 06/04/07		
Arsenic		2.8	0.2	mg/kg	
Barium		5.6	0.1	mg/kg	
Cadmium		0.1	0.1	mg/kg	
Chromium		5.2	0.1	mg/kg	
Lead		2.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/05/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.51		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	15:30
Sample ID:	Rinse	**Date Received:**	06/04/07
Sample No:	7-2475-012	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	15:30
Sample ID:	Rinse	**Date Received:**	06/04/07
Sample No:	7-2475-012	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/08/07		Preparation Date: 06/05/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 10	10	ug/L	
Benzidine	< 10	10	ug/L	
Benzo(a)anthracene	< 10	10	ug/L	
Benzo(a)pyrene	< 10	10	ug/L	
Benzo(b)fluoranthene	< 10	10	ug/L	
Benzo(k)fluoranthene	< 10	10	ug/L	
Benzo(ghi)perylene	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Chrysene	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Dibenzo(a,h)anthracene	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
3,3'-Dichlorobenzidine	< 20	20	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	15:30
Sample ID:	Rinse	**Date Received:**	06/04/07
Sample No:	7-2475-012	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/08/07		Preparation Date: 06/05/07		
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Fluoranthene	< 10	10	ug/L	
Fluorene	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Indeno(1,2,3-cd)pyrene	< 10	10	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	
3 & 4-Methylphenol	< 10	10	ug/L	
Naphthalene	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenanthrene	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
Pyrene	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	15:30
Sample ID:	Rinse	**Date Received:**	06/04/07
Sample No:	7-2475-012	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs **Method: 8081A/8082**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/04/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	<	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A **Method: 8321A**				
Analysis Date: 06/07/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals **Method: 7470A**				
Analysis Date: 06/05/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/01/07
Project ID:	Lyons, Landfill	**Time Collected:**	15:30
Sample ID:	Rinse	**Date Received:**	06/04/07
Sample No:	7-2475-012	**Date Reported:**	06/12/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 06/07/07		Preparation Date: 06/05/07		
Arsenic	< 0.002	0.002	mg/L	
Barium	< 0.001	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	< 0.001	0.001	mg/L	
Lead	< 0.002	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	< 0.001	0.001	mg/L	
pH @ 25°C **Method: 4500H+,B**				
Analysis Date: 06/04/07 14:40				
pH @ 25°C	6.14		Units	H

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

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24 Hr. Pager (708) 569-7507
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IEPA Certification# 100292

Company Name: Bradburne, Bailey + Johnson
Street Address: 515 N. State St. Suite 2200
City: Chicago State: IL Zip: 60610
Phone: 312-644-8556 Fax: 312-644-8555 e-mail: kmccartney@bbjgroup.com
Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☑
Sampled By: Michele Hargreaves

Project I.D.: Lyons, Landfill
P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOC (8260B)	SVOC (8270C)	PCB's (8082)	RCRA metals (6010B 7470A/7471A)	Herbicides (8151)	Pesticides (8081A)	pH (9040B/9045C)	Comments	Lab I.D.
6/1 ~~B-36 (3½-5)~~	Trip Blank		X								7-2475-001
6/1 3:45pm	B-36 (3½-5ft)	soil	X	X	X	X		X	X	X	002
6/1 3:50pm	B-36 (13½-15ft)	soil	X	X	X	X		X	X	X	003
6/1 3:55pm	B-34 (6-7½ft)	soil	X	X	X	X		X	X	X	004
6/1 3:55pm	B-34 (18½-20ft)	soil	X	X	X	X		X	X	X	005
6/1 4:00pm	B-31 (8½-10ft)	soil	X	X	X	X		X	X	X	006
6/1 4:10pm	B-31 (6-7½ft)	soil	X	X	X	X		X	X	X	007
6/1 4:15pm	B-32 (3½-5ft)	soil	X	X	X	X		X	X	X	008
6/1 4:15pm	B-32 (1-2½ft)	soil	X	X	X	X		X	X	X	009
6/1 4:20pm	B-33 (3½-5ft)	soil	X	X	X	X		X	X	X	010
6/1 4:25pm	B-33 (13.5-15ft)	soil	X	X	X	X		X	X	X	011
6/1 3:30pm	Rinse	water	X	X	X	X		X	X	X	012

Can you rename the soil/sample descriptions with a CCSB- prefix
Thanks!
MH 6/5

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☑ Yes ☐ No

Notes and Special Instructions:

Relinquished By: Michele Hargreaves Date/Time 6/4 7:00am Received By: [signature] Date/Time 6/4/07 7:00
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 4/06

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June 14, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons Landfill
First Environmental File ID: 7-2497
Date Received: June 05, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons Landfill**

First Environmental File ID: **7-2497**

Date Received: **June 05, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

Method Comments

Lab Number	Sample ID	Comments:
7-2497-001	CCSB-35 (1-5ft)	*Volatile Organic Compounds* The reporting limits are elevated due to matrix interference.
7-2497-002	CCSB-35 (13.5-15ft)	*Semi-Volatile Compounds* Surrogate recovery outside control limits; low bias due to matrix interference.

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (1-5ft)
Sample No: 7-2497-001

Date Collected: 06/04/07
Time Collected: 15:40
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/05/07				
Total Solids	94.32		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 500	100	ug/kg	
Benzene	< 30.0	5.0	ug/kg	
Bromodichloromethane	< 50.0	5.0	ug/kg	
Bromoform	< 50.0	5.0	ug/kg	
Bromomethane	< 50.0	10.0	ug/kg	
2-Butanone (MEK)	< 50.0	100	ug/kg	
Carbon disulfide	< 50.0	5.0	ug/kg	
Carbon tetrachloride	< 50.0	5.0	ug/kg	
Chlorobenzene	< 50.0	5.0	ug/kg	
Chlorodibromomethane	< 50.0	5.0	ug/kg	
Chloroethane	< 50.0	10.0	ug/kg	
Chloroform	< 50.0	5.0	ug/kg	
Chloromethane	< 50.0	10.0	ug/kg	
1,1-Dichloroethane	< 50.0	5.0	ug/kg	
1,2-Dichloroethane	< 50.0	5.0	ug/kg	
1,1-Dichloroethene	< 50.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 50.0	5.0	ug/kg	
1,2-Dichloropropane	< 50.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 50.0	5.0	ug/kg	
Ethylbenzene	< 50.0	5.0	ug/kg	
2-Hexanone	< 50.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 50.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 50.0	10.0	ug/kg	
Methylene chloride	< 50.0	20.0	ug/kg	
Styrene	< 50.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 50.0	5.0	ug/kg	
Tetrachloroethene	< 50.0	5.0	ug/kg	
Toluene	< 50.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 50.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 50.0	5.0	ug/kg	
Trichloroethene	< 50.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (1-5ft)
Sample No: 7-2497-001

Date Collected: 06/04/07
Time Collected: 15:40
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 50.0	10.0	ug/kg	
Vinyl chloride	< 50.0	10.0	ug/kg	
Xylene, Total	< 50.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	505	330	ug/kg	
Benzo(a)pyrene	464	90	ug/kg	
Benzo(b)fluoranthene	539	330	ug/kg	
Benzo(k)fluoranthene	428	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	374	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	534	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (1-5ft)
Sample No: 7-2497-001

Date Collected: 06/04/07
Time Collected: 15:40
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	1,100	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	4,520	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	882	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	1,020	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (1-5ft)
Sample No: 7-2497-001

Date Collected: 06/04/07
Time Collected: 15:40
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/05/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (1-5ft)
Sample No: 7-2497-001

Date Collected: 06/04/07
Time Collected: 15:40
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		2.4	0.2	mg/kg	
Barium		10.1	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		12.9	0.1	mg/kg	
Lead		16.0	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/07/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.58		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (13.5-15ft)
Sample No: 7-2497-002

Date Collected: 06/04/07
Time Collected: 15:45
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/05/07				
Total Solids	86.29		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (13.5-15ft)
Sample No: 7-2497-002

Date Collected: 06/04/07
Time Collected: 15:45
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (13.5-15ft)
Sample No: 7-2497-002

Date Collected: 06/04/07
Time Collected: 15:45
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/11/07		**Preparation Method 3540C** Preparation Date: 06/05/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (13.5-15ft)
Sample No: 7-2497-002

Date Collected: 06/04/07
Time Collected: 15:45
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/05/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-35 (13.5-15ft)
Sample No: 7-2497-002

Date Collected: 06/04/07
Time Collected: 15:45
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		3.5	0.2	mg/kg	
Barium		4.2	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		2.9	0.1	mg/kg	
Lead		2.7	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/07/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.35		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (3.5-5ft)
Sample No: 7-2497-003

Date Collected: 06/04/07
Time Collected: 16:10
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/05/07				
Total Solids	85.05		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/11/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (3.5-5ft)
Sample No: 7-2497-003

Date Collected: 06/04/07
Time Collected: 16:10
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 06/11/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (3.5-5ft)
Sample No: 7-2497-003

Date Collected: 06/04/07
Time Collected: 16:10
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (3.5-5ft)
Sample No: 7-2497-003

Date Collected: 06/04/07
Time Collected: 16:10
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 06/11/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 06/05/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 06/12/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 06/05/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (3.5-5ft)
Sample No: 7-2497-003

Date Collected: 06/04/07
Time Collected: 16:10
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		10.0	0.2	mg/kg	
Barium		21.5	0.1	mg/kg	
Cadmium		0.2	0.1	mg/kg	
Chromium		9.3	0.1	mg/kg	
Lead		8.0	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/07/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.76		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (13.5-15ft)
Sample No: 7-2497-004

Date Collected: 06/04/07
Time Collected: 16:15
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/05/07				
Total Solids	82.54		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	7.1	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (13.5-15ft)
Sample No: 7-2497-004

Date Collected: 06/04/07
Time Collected: 16:15
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C**				
Analysis Date: 06/11/07 Preparation Date: 06/05/07				
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (13.5-15ft)
Sample No: 7-2497-004

Date Collected: 06/04/07
Time Collected: 16:15
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/11/07		**Preparation Method 3540C** Preparation Date: 06/05/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (13.5-15ft)
Sample No: 7-2497-004

Date Collected: 06/04/07
Time Collected: 16:15
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/11/07		Preparation Date: 06/05/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/05/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-37 (13.5-15ft)
Sample No: 7-2497-004

Date Collected: 06/04/07
Time Collected: 16:15
Date Received: 06/05/07
Date Reported: 06/14/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		2.4	0.2	mg/kg	
Barium		4.1	0.1	mg/kg	
Cadmium		0.1	0.1	mg/kg	
Chromium		3.3	0.1	mg/kg	
Lead		1.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/07/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.27		Units	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
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Naperville, Illinois 60563
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24 Hr. Pager (708) 569-7507
E-mail: info@firstenv.com
IEPA Certification# 100292

Company Name: Bradburne, Briller + Johnson
Street Address: 515 N. ~~Front~~ State Street, Suite 2200
City: Chicago State: IL Zip: 60610
Phone: 312-644-8556 Fax: 312-644-8555 e-mail: kmccartney@bbjgroup.com
Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☐
Sampled By: Michele Hargreaves

Project I.D.: Lyons Landfill
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOC's (8260B)	SVOC's (8270C)	RCRA Metals (6010B + 7470A/7471A)	PCB's (8082)	Herbicides (8151)	Pesticides (8081A)	PH (9040B/9046C)		Comments	Lab I.D.
6/4 3:40pm	B-35 (1-5ft)	S	X	X	X	X	X	X	X		7-2497-001	
6/4 3:45pm	B-35 (13.5-15ft)	S	X	X	X	X	X	X	X			002
6/4 4:10pm	B-37 (3.5-5ft)	S	X	X	X	X	X	X	X			003
6/4 4:15pm	B-37 (13.5-15ft)	S	X	X	X	X	X	X	X			004
											Can you please report sample descriptions as	
											CCSB-35 (1-5ft)	
											CCSB-35 (13.5-15ft)	
											CCSB-37 (3.5-5ft)	
											CCSB-37 (13.5-15ft)	

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC ~~Yes~~ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: ~~Yes~~ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☐ Yes ☐ No

Thanks!
MH (6/5)

Notes and Special Instructions:

Relinquished By: Michele Hargreaves Date/Time 6/5 6:45am Received By: [signature] Date/Time 6/5/07 6:45
Relinquished By: Date/Time Received By: Date/Time

Rev. 4/06

First Environmental Laboratories, Inc.

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June 15, 2007

Mr. Kevin McCartney
BRADBURNE, BRILLER & JOHNSON
515 N. State Street
Suite 2200
Chicago, IL 60610

Project ID: Lyons Landfill
First Environmental File ID: 7-2515
Date Received: June 05, 2007

Dear Mr. Kevin McCartney:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All analyses were performed in accordance with established methods and within established holding times. All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 001728: effective 04/13/07 through 02/28/08.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200 or neal@firstenv.com.

Sincerely,

Neal Cleghorn
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

BRADBURNE, BRILLER & JOHNSON

Project ID: **Lyons Landfill**

First Environmental File ID: **7-2515**

Date Received: **June 05, 2007**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (1-2ft)
Sample No: 7-2515-001

Date Collected: 06/05/07
Time Collected: 8:25
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	92.67		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (1-2ft)
Sample No: 7-2515-001

Date Collected: 06/05/07
Time Collected: 8:25
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/14/07		Preparation Date: 06/06/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	596	330	ug/kg	
Benzo(a)pyrene	609	90	ug/kg	
Benzo(b)fluoranthene	726	330	ug/kg	
Benzo(k)fluoranthene	467	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	638	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	96	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	8:25
Sample ID:	CCSB-38 (1-2ft)	**Date Received:**	06/05/07
Sample No:	7-2515-001	**Date Reported:**	06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/14/07		Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	1,600	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	1,280	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	1,200	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (1-2ft)
Sample No: 7-2515-001

Date Collected: 06/05/07
Time Collected: 8:25
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds Analysis Date: 06/14/07	**Method: 8270C**	**Preparation Method 3540C** Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs Analysis Date: 06/13/07	**Method: 8081A/8082**	**Preparation Method 3540C** Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (1-2ft)
Sample No: 7-2515-001

Date Collected: 06/05/07
Time Collected: 8:25
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/09/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		5.4	0.2	mg/kg	
Barium		36.7	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		9.2	0.1	mg/kg	
Lead		21.9	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.89		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (6-7.5ft)
Sample No: 7-2515-002

Date Collected: 06/05/07
Time Collected: 8:35
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	84.65		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (6-7.5ft)
Sample No: 7-2515-002

Date Collected: 06/05/07
Time Collected: 8:35
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (6-7.5ft)
Sample No: 7-2515-002

Date Collected: 06/05/07
Time Collected: 8:35
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (6-7.5ft)
Sample No: 7-2515-002

Date Collected: 06/05/07
Time Collected: 8:35
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-38 (6-7.5ft)
Sample No: 7-2515-002

Date Collected: 06/05/07
Time Collected: 8:35
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		13.5	0.2	mg/kg	
Barium		35.2	0.1	mg/kg	
Cadmium		0.6	0.1	mg/kg	
Chromium		14.5	0.1	mg/kg	
Lead		12.2	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.65		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	8:40
Sample ID:	CCSB-39 (3.5-5ft)	**Date Received:**	06/05/07
Sample No:	7-2515-003	**Date Reported:**	06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	83.98		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (3.5-5ft)
Sample No: 7-2515-003

Date Collected: 06/05/07
Time Collected: 8:40
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	342	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	779	330	ug/kg	
Benzo(a)pyrene	837	90	ug/kg	
Benzo(b)fluoranthene	913	330	ug/kg	
Benzo(k)fluoranthene	654	330	ug/kg	
Benzo(ghi)perylene	565	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	784	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	207	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (3.5-5ft)
Sample No: 7-2515-003

Date Collected: 06/05/07
Time Collected: 8:40
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	1,470	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	559	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	825	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	1,200	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (3.5-5ft)
Sample No: 7-2515-003

Date Collected: 06/05/07
Time Collected: 8:40
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (3.5-5ft)
Sample No: 7-2515-003

Date Collected: 06/05/07
Time Collected: 8:40
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		21.3	0.2	mg/kg	
Barium		95.3	0.1	mg/kg	
Cadmium		0.8	0.1	mg/kg	
Chromium		20.0	0.1	mg/kg	
Lead		56.4	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		0.11	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.34		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (8.5-10ft)
Sample No: 7-2515-004

Date Collected: 06/05/07
Time Collected: 8:45
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	83.35		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (8.5-10ft)
Sample No: 7-2515-004

Date Collected: 06/05/07
Time Collected: 8:45
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (8.5-10ft)
Sample No: 7-2515-004

Date Collected: 06/05/07
Time Collected: 8:45
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/13/07		**Preparation Method 3540C** Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (8.5-10ft)
Sample No: 7-2515-004

Date Collected: 06/05/07
Time Collected: 8:45
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-39 (8.5-10ft)
Sample No: 7-2515-004

Date Collected: 06/05/07
Time Collected: 8:45
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		2.9	0.2	mg/kg	
Barium		6.5	0.1	mg/kg	
Cadmium		0.1	0.1	mg/kg	
Chromium		3.8	0.1	mg/kg	
Lead		2.8	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.28		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (1-2.5ft)
Sample No: 7-2515-005

Date Collected: 06/05/07
Time Collected: 8:55
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	90.19		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (1-2.5ft)
Sample No: 7-2515-005

Date Collected: 06/05/07
Time Collected: 8:55
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/14/07		Preparation Date: 06/06/07		
Acenaphthene	373	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	1,020	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	2,350	330	ug/kg	
Benzo(a)pyrene	2,340	90	ug/kg	
Benzo(b)fluoranthene	3,280	330	ug/kg	
Benzo(k)fluoranthene	1,270	330	ug/kg	
Benzo(ghi)perylene	1,010	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	421	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	2,280	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	479	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (1-2.5ft)
Sample No: 7-2515-005

Date Collected: 06/05/07
Time Collected: 8:55
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/14/07		Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	3,920	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	1,060	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	2,290	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	3,080	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (1-2.5ft)
Sample No: 7-2515-005

Date Collected: 06/05/07
Time Collected: 8:55
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/14/07		Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (1-2.5ft)
Sample No: 7-2515-005

Date Collected: 06/05/07
Time Collected: 8:55
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		11.0	0.2	mg/kg	
Barium		58.1	0.1	mg/kg	
Cadmium		0.8	0.1	mg/kg	
Chromium		18.4	0.1	mg/kg	
Lead		37.8	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		0.10	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		9.12		Units	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (8.5-10ft)
Sample No: 7-2515-006

Date Collected: 06/05/07
Time Collected: 9:00
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 160.3**				
Analysis Date: 06/06/07				
Total Solids	87.07		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
trans-1,3-Dichloropropene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (8.5-10ft)
Sample No: 7-2515-006

Date Collected: 06/05/07
Time Collected: 9:00
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 06/08/07				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	467	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	287	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (8.5-10ft)
Sample No: 7-2515-006

Date Collected: 06/05/07
Time Collected: 9:00
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Fluoranthene	531	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 330	330	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	382	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	435	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (8.5-10ft)
Sample No: 7-2515-006

Date Collected: 06/05/07
Time Collected: 9:00
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082**		**Preparation Method 3540C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	

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Analytical Report

Client: BRADBURNE, BRILLER & JOHNSON
Project ID: Lyons Landfill
Sample ID: CCSB-40 (8.5-10ft)
Sample No: 7-2515-006

Date Collected: 06/05/07
Time Collected: 9:00
Date Received: 06/05/07
Date Reported: 06/15/07

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Herbicides	**Method: 8321**				
Analysis Date: 06/08/07					
2,4-Dichlorophenoxyacetic acid (2,4-D)		< 100	100	ug/kg	S
Silvex (2,4,5-TP)		< 100	100	ug/kg	S
Total Metals	**Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/06/07			Preparation Date: 06/06/07		
Arsenic		8.5	0.2	mg/kg	
Barium		28.1	0.1	mg/kg	
Cadmium		0.3	0.1	mg/kg	
Chromium		12.5	0.1	mg/kg	
Lead		12.1	0.2	mg/kg	
Selenium		< 0.2	0.2	mg/kg	
Silver		< 0.1	0.1	mg/kg	
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		0.07	0.05	mg/kg	
pH @ 25°C, 1:10	**Method: 4500H+B**				
Analysis Date: 06/08/07					
pH @ 25°C, 1:10		8.68		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:40
Sample ID:	CCMW-35	**Date Received:**	06/05/07
Sample No:	7-2515-007	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/11/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	28.7	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:40
Sample ID:	CCMW-35	**Date Received:**	06/05/07
Sample No:	7-2515-007	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:40
Sample ID:	CCMW-35	**Date Received:**	06/05/07
Sample No:	7-2515-007	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:40
Sample ID:	CCMW-35	**Date Received:**	06/05/07
Sample No:	7-2515-007	**Date Reported:**	06/15/07

Analyte		Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**		**Preparation Method 3510C**		
Analysis Date: 06/13/07			Preparation Date: 06/06/07		
Aldrin		< 0.05	0.05	ug/L	
Aroclor 1016		< 0.50	0.50	ug/L	
Aroclor 1221		< 0.50	0.50	ug/L	
Aroclor 1232		< 0.50	0.50	ug/L	
Aroclor 1242		< 0.50	0.50	ug/L	
Aroclor 1248		< 0.50	0.50	ug/L	
Aroclor 1254		< 0.50	0.50	ug/L	
Aroclor 1260		<	0.50	ug/L	
alpha-BHC		< 0.05	0.05	ug/L	
beta-BHC		< 0.05	0.05	ug/L	
delta-BHC		< 0.05	0.05	ug/L	
gamma-BHC (Lindane)		< 0.05	0.05	ug/L	
alpha-Chlordane		< 0.50	0.50	ug/L	
gamma-Chlordane		< 0.50	0.50	ug/L	
4,4'-DDD		< 0.10	0.10	ug/L	
4,4'-DDE		< 0.10	0.10	ug/L	
4,4'-DDT		< 0.10	0.10	ug/L	
Dieldrin		< 0.10	0.10	ug/L	
Endosulfan I		< 0.05	0.05	ug/L	
Endosulfan II		< 0.10	0.10	ug/L	
Endosulfan sulfate		< 0.10	0.10	ug/L	
Endrin		< 0.10	0.10	ug/L	
Endrin aldehyde		< 0.10	0.10	ug/L	
Endrin ketone		< 0.10	0.10	ug/L	
Heptachlor		< 0.05	0.05	ug/L	
Heptachlor epoxide		< 0.05	0.05	ug/L	
Methoxychlor		< 0.50	0.50	ug/L	
Toxaphene		< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**				
Analysis Date: 06/09/07					
2,4-D		< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)		< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:40
Sample ID:	CCMW-35	**Date Received:**	06/05/07
Sample No:	7-2515-007	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Arsenic	0.011	0.002	mg/L	
Barium	0.244	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	0.003	0.001	mg/L	
Lead	0.005	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	< 0.001	0.001	mg/L	
pH @ 25°C **Method: 4500H+,B**				
Analysis Date: 06/05/07 16:00				
pH @ 25°C	7.21		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:50
Sample ID:	CCMW-36	**Date Received:**	06/05/07
Sample No:	7-2515-008	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/11/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:50
Sample ID:	CCMW-36	**Date Received:**	06/05/07
Sample No:	7-2515-008	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:50
Sample ID:	CCMW-36	**Date Received:**	06/05/07
Sample No:	7-2515-008	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	0.32	0.13	ug/L	
Benzo(a)pyrene	0.3	0.2	ug/L	
Benzo(b)fluoranthene	0.27	0.18	ug/L	
Benzo(k)fluoranthene	0.31	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:50
Sample ID:	CCMW-36	**Date Received:**	06/05/07
Sample No:	7-2515-008	**Date Reported:**	06/15/07

Analyte		Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**		**Preparation Method 3510C**		
Analysis Date: 06/13/07			Preparation Date: 06/06/07		
Aldrin		< 0.05	0.05	ug/L	
Aroclor 1016		< 0.50	0.50	ug/L	
Aroclor 1221		< 0.50	0.50	ug/L	
Aroclor 1232		< 0.50	0.50	ug/L	
Aroclor 1242		< 0.50	0.50	ug/L	
Aroclor 1248		< 0.50	0.50	ug/L	
Aroclor 1254		< 0.50	0.50	ug/L	
Aroclor 1260		< 0.50	0.50	ug/L	
alpha-BHC		< 0.05	0.05	ug/L	
beta-BHC		< 0.05	0.05	ug/L	
delta-BHC		< 0.05	0.05	ug/L	
gamma-BHC (Lindane)		< 0.05	0.05	ug/L	
alpha-Chlordane		< 0.50	0.50	ug/L	
gamma-Chlordane		< 0.50	0.50	ug/L	
4,4'-DDD		< 0.10	0.10	ug/L	
4,4'-DDE		< 0.10	0.10	ug/L	
4,4'-DDT		< 0.10	0.10	ug/L	
Dieldrin		< 0.10	0.10	ug/L	
Endosulfan I		< 0.05	0.05	ug/L	
Endosulfan II		< 0.10	0.10	ug/L	
Endosulfan sulfate		< 0.10	0.10	ug/L	
Endrin		< 0.10	0.10	ug/L	
Endrin aldehyde		< 0.10	0.10	ug/L	
Endrin ketone		< 0.10	0.10	ug/L	
Heptachlor		< 0.05	0.05	ug/L	
Heptachlor epoxide		< 0.05	0.05	ug/L	
Methoxychlor		< 0.50	0.50	ug/L	
Toxaphene		< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**				
Analysis Date: 06/09/07					
2,4-D		< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)		< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**				
Analysis Date: 06/08/07					
Mercury		< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	11:50
Sample ID:	CCMW-36	**Date Received:**	06/05/07
Sample No:	7-2515-008	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Arsenic	0.004	0.002	mg/L	
Barium	0.037	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	0.002	0.001	mg/L	
Lead	0.005	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	< 0.001	0.001	mg/L	
pH @ 25°C **Method: 4500H+,B**				
Analysis Date: 06/05/07 16:00				
pH @ 25°C	7.17		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	12:00
Sample ID:	CCMW-34	**Date Received:**	06/05/07
Sample No:	7-2515-009	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/11/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	12:00
Sample ID:	CCMW-34	**Date Received:**	06/05/07
Sample No:	7-2515-009	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
Benzidine	< 10	10	ug/L	
Benzoic acid	< 50	50	ug/L	
Benzyl alcohol	< 20	20	ug/L	
bis(2-Chloroethoxy)methane	< 10	10	ug/L	
bis(2-Chloroethyl)ether	< 10	10	ug/L	
bis(2-Chloroisopropyl)ether	< 10	10	ug/L	
bis(2-Ethylhexyl)phthalate	< 5	5	ug/L	
4-Bromophenyl phenyl ether	< 10	10	ug/L	
Butyl benzyl phthalate	< 10	10	ug/L	
Carbazole	< 10	10	ug/L	
4-Chloroaniline	< 10	10	ug/L	
4-Chloro-3-methylphenol	< 20	20	ug/L	
2-Chloronaphthalene	< 10	10	ug/L	
2-Chlorophenol	< 10	10	ug/L	
4-Chlorophenyl phenyl ether	< 10	10	ug/L	
Dibenzofuran	< 10	10	ug/L	
Di-n-butyl phthalate	< 10	10	ug/L	
1,2-Dichlorobenzene	< 10	10	ug/L	
1,3-Dichlorobenzene	< 10	10	ug/L	
1,4-Dichlorobenzene	< 10	10	ug/L	
2,4-Dichlorophenol	< 10	10	ug/L	
Diethyl phthalate	< 10	10	ug/L	
2,4-Dimethylphenol	< 10	10	ug/L	
Dimethyl phthalate	< 10	10	ug/L	
4,6-Dinitro-2-methylphenol	< 50	50	ug/L	
2,4-Dinitrophenol	< 10	10	ug/L	
2,4-Dinitrotoluene	< 10	10	ug/L	
2,6-Dinitrotoluene	< 10	10	ug/L	
Di-n-octylphthalate	< 10	10	ug/L	
Hexachlorobenzene	< 10	10	ug/L	
Hexachlorobutadiene	< 10	10	ug/L	
Hexachlorocyclopentadiene	< 10	10	ug/L	
Hexachloroethane	< 5	5	ug/L	
Isophorone	< 10	10	ug/L	
2-Methylnaphthalene	< 10	10	ug/L	
2-Methylphenol	< 10	10	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	12:00
Sample ID:	CCMW-34	**Date Received:**	06/05/07
Sample No:	7-2515-009	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/12/07		Preparation Date: 06/06/07		
3 & 4-Methylphenol	< 10	10	ug/L	
2-Nitroaniline	< 50	50	ug/L	
3-Nitroaniline	< 50	50	ug/L	
4-Nitroaniline	< 20	20	ug/L	
Nitrobenzene	< 10	10	ug/L	
2-Nitrophenol	< 10	10	ug/L	
4-Nitrophenol	< 50	50	ug/L	
n-Nitrosodimethylamine	< 10	10	ug/L	
n-Nitrosodiphenylamine	< 10	10	ug/L	
n-Nitrosodi-n-propylamine	< 10	10	ug/L	
Pentachlorophenol	< 10	10	ug/L	
Phenol	< 10	10	ug/L	
1,2,4-Trichlorobenzene	< 10	10	ug/L	
2,4,5-Trichlorophenol	< 10	10	ug/L	
2,4,6-Trichlorophenol	< 10	10	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	12:00
Sample ID:	CCMW-34	**Date Received:**	06/05/07
Sample No:	7-2515-009	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3510C**		
Analysis Date: 06/13/07		Preparation Date: 06/06/07		
Aldrin	< 0.05	0.05	ug/L	
Aroclor 1016	< 0.50	0.50	ug/L	
Aroclor 1221	< 0.50	0.50	ug/L	
Aroclor 1232	< 0.50	0.50	ug/L	
Aroclor 1242	< 0.50	0.50	ug/L	
Aroclor 1248	< 0.50	0.50	ug/L	
Aroclor 1254	< 0.50	0.50	ug/L	
Aroclor 1260	< 0.50	0.50	ug/L	
alpha-BHC	< 0.05	0.05	ug/L	
beta-BHC	< 0.05	0.05	ug/L	
delta-BHC	< 0.05	0.05	ug/L	
gamma-BHC (Lindane)	< 0.05	0.05	ug/L	
alpha-Chlordane	< 0.50	0.50	ug/L	
gamma-Chlordane	< 0.50	0.50	ug/L	
4,4'-DDD	< 0.10	0.10	ug/L	
4,4'-DDE	< 0.10	0.10	ug/L	
4,4'-DDT	< 0.10	0.10	ug/L	
Dieldrin	< 0.10	0.10	ug/L	
Endosulfan I	< 0.05	0.05	ug/L	
Endosulfan II	< 0.10	0.10	ug/L	
Endosulfan sulfate	< 0.10	0.10	ug/L	
Endrin	< 0.10	0.10	ug/L	
Endrin aldehyde	< 0.10	0.10	ug/L	
Endrin ketone	< 0.10	0.10	ug/L	
Heptachlor	< 0.05	0.05	ug/L	
Heptachlor epoxide	< 0.05	0.05	ug/L	
Methoxychlor	< 0.50	0.50	ug/L	
Toxaphene	< 1.0	1.0	ug/L	
Herbicides Method 8321A	**Method: 8321A**			
Analysis Date: 06/09/07				
2,4-D	< 0.2	0.2	ug/L	S
Silvex (2,4,5-TP)	< 0.10	0.1	ug/L	S
Total Metals	**Method: 7470A**			
Analysis Date: 06/08/07				
Mercury	< 0.0005	0.0005	mg/L	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	12:00
Sample ID:	CCMW-34	**Date Received:**	06/05/07
Sample No:	7-2515-009	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010B**		**Preparation Method 3010A**		
Analysis Date: 06/06/07		Preparation Date: 06/06/07		
Arsenic	0.005	0.002	mg/L	
Barium	0.074	0.001	mg/L	
Cadmium	< 0.001	0.001	mg/L	
Chromium	0.001	0.001	mg/L	
Lead	< 0.002	0.002	mg/L	
Selenium	< 0.002	0.002	mg/L	
Silver	0.002	0.001	mg/L	
pH @ 25°C **Method: 4500H+,B**				
Analysis Date: 06/05/07 16:00				
pH @ 25°C	7.75		Units	

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Analytical Report

Client:	BRADBURNE, BRILLER & JOHNSON	**Date Collected:**	06/05/07
Project ID:	Lyons Landfill	**Time Collected:**	0:00
Sample ID:	Trip Blank	**Date Received:**	06/05/07
Sample No:	7-2515-010	**Date Reported:**	06/15/07

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 06/11/07				
Acetone	< 100	100	ug/L	
Benzene	< 5.0	5.0	ug/L	
Bromodichloromethane	< 1.0	1.0	ug/L	
Bromoform	< 1.0	1.0	ug/L	
Bromomethane	< 5.0	5.0	ug/L	
2-Butanone (MEK)	< 10.0	10.0	ug/L	
Carbon disulfide	< 5.0	5.0	ug/L	
Carbon tetrachloride	< 5.0	5.0	ug/L	
Chlorobenzene	< 5.0	5.0	ug/L	
Chlorodibromomethane	< 1.0	1.0	ug/L	
Chloroethane	< 10.0	10.0	ug/L	
Chloroform	< 1.0	1.0	ug/L	
Chloromethane	< 10.0	10.0	ug/L	
1,1-Dichloroethane	< 5.0	5.0	ug/L	
1,2-Dichloroethane	< 5.0	5.0	ug/L	
1,1-Dichloroethene	< 5.0	5.0	ug/L	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/L	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/L	
1,2-Dichloropropane	< 5.0	5.0	ug/L	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
2-Hexanone	< 10.0	10.0	ug/L	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/L	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/L	
Methylene chloride	< 5.0	5.0	ug/L	
Styrene	< 5.0	5.0	ug/L	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/L	
Tetrachloroethene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
1,1,1-Trichloroethane	< 5.0	5.0	ug/L	
1,1,2-Trichloroethane	< 5.0	5.0	ug/L	
Trichloroethene	< 5.0	5.0	ug/L	
Vinyl acetate	< 10.0	10.0	ug/L	
Vinyl chloride	< 2.0	2.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	

CHAIN OF CUSTODY RECORD

Page____ of ____ pgs

First Environmental Laboratories, Inc.

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Company Name: Bradburne, Briller & Johnson
Street Address: 515 N. State Street, Suite 2200
City: Chicago State: IL Zip: 60610
Phone: 312-644-8556 Fax: 312-644-8555 e-mail: kccmartney@bbjgroup.com
Send Report To: Kevin McCartney Via: Fax ☐ e-mail ☑
Sampled By: Michele Hargreaves

Project I.D.: Lyons Landfill
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	VOC's (8260B)	SVOC's (8270C)	RCRA Metals (6010B + 7470A Hg)	PCB's (8082)	Herbicides (8151)	Pesticides (8081A)	PH (9040B/9045C)		Comments	Lab I.D.
6/5 8:25am	CCSB-38 (1-2ft)	S	X	X	X	X	X	X	X		7-2515-001	
6/5 8:35am	CCSB-38 (6-7½ft)	S	X	X	X	X	X	X	X			002
6/5 8:40am	CCSB-39 (3½-5ft)	S	X	X	X	X	X	X	X			003
6/5 8:45am	CCSB-39 (8½-10ft)	S	X	X	X	X	X	X	X			004
6/5 8:55am	CCSB-40 (1-2½ft)	S	X	X	X	X	X	X	X			005
6/5 9:00am	CCSB-40 (8½-10ft)	S	X	X	X	X	X	X	X			006
6/5 11:40am	CCMW-35	W	X	X	X	X	X	X	X			007
6/5 11:50am	CCMW-36	W	X	X	X	X	X	X	X			008
6/5 12:00am	CCMW-34	W	X	X	X	X	X	X	X			009
6/5	Trip Blank		X									010

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No.__ 2.6 ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Containers Received Preserved: ☑ Yes ☐ No

Notes and Special Instructions:

Relinquished By: Michele Hargreaves Date/Time 6/5 3:40pm Received By: M Date/Time 6/5/07 1435
Relinquished By: Date/Time Received By: Date/Time

Rev. 4/06

MOBILE GEOCHEMISTRY

H&P

20 June 2007

Mr. Kevin McCartney
Bradburne, Briller & Johnson, LLC - Chicago
515 N. State Street, Suite 2200
Chicago, IL 60610
RE: BBJ060807-14

Enclosed are the results of analyses for samples received by the laboratory on 08-Jun-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

J Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

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MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CCSG-32	E706031-01	Vapor	01-Jun-07	08-Jun-07
CCSG-33	E706031-02	Vapor	01-Jun-07	08-Jun-07
CCSG-35	E706031-03	Vapor	04-Jun-07	08-Jun-07
CCSF-35 t=0	E706031-04	Vapor	06-Jun-07	08-Jun-07
CCSF-35	E706031-05	Vapor	07-Jun-07	08-Jun-07

Hexachlorobutadiene failed to meet TO-15 criteria for daily calibration verification. The results for this compound should be considered estimates.

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Methane by GC/FID

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-32 (E706031-01) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
Methane	450	10	ppmv	1	EF71105	11-Jun-07	11-Jun-07	Modified EPA 8015B	
CCSG-33 (E706031-02) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
Methane	8200	10	ppmv	1	EF71105	11-Jun-07	11-Jun-07	Modified EPA 8015B	
CCSG-35 (E706031-03) Vapor Sampled: 04-Jun-07 Received: 08-Jun-07									
Methane	240	10	ppmv	1	EF71105	11-Jun-07	11-Jun-07	Modified EPA 8015B	
CCSF-35 t=0 (E706031-04) Vapor Sampled: 06-Jun-07 Received: 08-Jun-07									
Methane	38	10	ppmv	1	EF71105	11-Jun-07	11-Jun-07	Modified EPA 8015B	
CCSF-35 (E706031-05) Vapor Sampled: 07-Jun-07 Received: 08-Jun-07									
Methane	390	10	ppmv	1	EF71105	11-Jun-07	11-Jun-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-32 (E706031-01) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
Propene	64	10	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	10	5.0	"	"	"	"	"	"	QL-1H
Acetone	150	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	20	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	17	5.0	"	"	"	"	"	"	
n-Hexane	29	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	96	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	13	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	24	5.0	"	"	"	"	"	"	
n-Heptane	30	5.0	"	"	"	"	"	"	
Trichloroethene	20	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	29	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-32 (E706031-01) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
1,1,2-Trichloroethane	ND	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	7.1	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	12	5.0	"	"	"	"	"	"	
m,p-Xylene	22	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	15	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	5.6	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	6.9	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	11	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: Toluene-d8		*96.8 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		*"*	*"*	*"*	*"*	
CCSG-33 (E706031-02) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
Propene	ND	10	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	42	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-33 (E706031-02) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
Carbon disulfide	21	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	12	5.0	"	"	"	"	"	"	
2-Butanone	18	5.0	"	"	"	"	"	"	
n-Hexane	54	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	7.9	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	17	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	33	5.0	"	"	"	"	"	"	
n-Heptane	29	5.0	"	"	"	"	"	"	
Trichloroethene	34	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	67	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	12	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	13	5.0	"	"	"	"	"	"	
m,p-Xylene	43	5.0	"	"	"	"	"	"	
Styrene	7.7	5.0	"	"	"	"	"	"	
o-Xylene	17	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-33 (E706031-02) Vapor Sampled: 01-Jun-07 Received: 08-Jun-07									
4-Ethyltoluene	5.8	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
1,3,5-Trimethylbenzene	5.7	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	17	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: Toluene-d8		*94.5 %*	*80-120*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		*"*	*"*	*"*	*"*	
CCSG-35 (E706031-03) Vapor Sampled: 04-Jun-07 Received: 08-Jun-07									
Propene	600	10	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	11	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	560	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	200	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	49	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	48	5.0	"	"	"	"	"	"	
n-Hexane	63	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	7.5	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSG-35 (E706031-03) Vapor Sampled: 04-Jun-07 Received: 08-Jun-07									
1,1,1-Trichloroethane	ND	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	11	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	50	5.0	"	"	"	"	"	"	
n-Heptane	44	5.0	"	"	"	"	"	"	
Trichloroethene	12	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	8.2	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	19	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	7.2	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	11	5.0	"	"	"	"	"	"	
m,p-Xylene	19	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	8.0	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: Toluene-d8		*98.6 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ060807-14	
515 N. State Street, Suite 2200	Project Number: Lyons, IL	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSF-35 t=0 (E706031-04) Vapor Sampled: 06-Jun-07 Received: 08-Jun-07									
Propene	ND	10	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSF-35 t=0 (E706031-04) Vapor Sampled: 06-Jun-07 Received: 08-Jun-07									
1,1,2-Trichloroethane	ND	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	6.2	5.0	"	"	"	"	"	"	
m,p-Xylene	14	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: Toluene-d8		*96.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.3 %*	*80-120*		"	"	"	"	
CCSF-35 (E706031-05) Vapor Sampled: 07-Jun-07 Received: 08-Jun-07									
Propene	ND	10	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	34	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ060807-14	
515 N. State Street, Suite 2200	Project Number: Lyons, IL	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSF-35 (E706031-05) Vapor Sampled: 07-Jun-07 Received: 08-Jun-07									
Carbon disulfide	ND	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	5.0	"	"	"	"	"	"	
n-Hexane	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
n-Heptane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	17	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ060807-14	
515 N. State Street, Suite 2200	Project Number: Lyons, IL	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	20-Jun-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
CCSF-35 (E706031-05) Vapor Sampled: 07-Jun-07 Received: 08-Jun-07									
4-Ethyltoluene	ND	5.0	ug/m³ Air	1	EF71202	11-Jun-07	11-Jun-07	EPA TO-15	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.8 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Methane by GC/FID - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71105 - GC										
Blank (EF71105-BLK1)				Prepared & Analyzed: 11-Jun-07						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ060807-14	
515 N. State Street, Suite 2200	Project Number: Lyons, IL	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	20-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71202 - TO-15										
Blank (EF71202-BLK1)				Prepared & Analyzed: 11-Jun-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
Ethyl tert-butyl ether	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,4-Dioxane	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago	Project: BBJ060807-14	
515 N. State Street, Suite 2200	Project Number: Lyons, IL	Reported:
Chicago, IL 60610	Project Manager: Mr. Kevin McCartney	20-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71202 - TO-15										
Blank (EF71202-BLK1)				Prepared & Analyzed: 11-Jun-07						
cis-1,3-Dichloropropene	ND	5.0	ug/m³ Air							
4-Methyl-2-pentanone	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	10	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: Toluene-d8	*93.0*		*"*	*96.2*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*168*		*"*	*182*		*92.3*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71202 - TO-15										
LCS (EF71202-BS1)				Prepared & Analyzed: 11-Jun-07						
Propene	35.8	10	ug/m³ Air	35.0		102	65-135			
Dichlorodifluoromethane	134	10	"	101		133	65-135			
Chloromethane	48.2	5.0	"	42.0		115	65-135			
Dichlorotetrafluoroethane	177	10	"	142		125	65-135			
Vinyl chloride	57.6	5.0	"	52.0		111	65-135			
Bromomethane	85.8	5.0	"	79.2		108	65-135			
Chloroethane	53.8	5.0	"	53.6		100	65-135			
Trichlorofluoromethane	155	5.0	"	113		137	65-135			QL-1H
Acetone	54.0	20	"	48.4		112	65-135			
1,1-Dichloroethene	87.6	5.0	"	80.8		108	65-135			
1,1,2-Trichlorotrifluoroethane	158	10	"	155		102	65-135			
Methylene chloride	65.2	5.0	"	70.8		92.1	65-135			
Carbon disulfide	63.7	5.0	"	63.2		101	65-135			
trans-1,2-Dichloroethene	85.9	5.0	"	80.8		106	65-135			
Methyl tert-butyl ether	80.4	5.0	"	73.6		109	65-135			
Vinyl acetate	76.6	5.0	"	72.0		106	65-135			
1,1-Dichloroethane	85.5	5.0	"	82.4		104	65-135			
2-Butanone	54.2	5.0	"	60.0		90.3	65-135			
n-Hexane	75.1	5.0	"	72.0		104	65-135			
cis-1,2-Dichloroethene	86.1	5.0	"	80.0		108	65-135			
Ethyl acetate	57.8	5.0	"	73.6		78.5	65-135			
Chloroform	112	5.0	"	99.2		113	65-135			
Tetrahydrofuran	56.4	5.0	"	60.0		94.0	65-135			
1,1,1-Trichloroethane	139	5.0	"	111		125	65-135			
1,2-Dichloroethane	97.8	5.0	"	82.4		119	65-135			
Benzene	60.2	5.0	"	64.8		92.9	65-135			
Carbon tetrachloride	163	5.0	"	128		127	65-135			
Cyclohexane	72.6	5.0	"	70.4		103	65-135			
n-Heptane	81.8	5.0	"	83.6		97.8	65-135			
Trichloroethene	116	5.0	"	110		105	65-135			
1,2-Dichloropropane	89.2	5.0	"	94.4		94.5	65-135			
1,4-Dioxane	72.0	5.0	"	73.6		97.8	65-135			
Bromodichloromethane	163	5.0	"	137		119	65-135			
cis-1,3-Dichloropropene	95.5	5.0	"	92.4		103	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EF71202 - TO-15										
LCS (EF71202-BS1)				Prepared & Analyzed: 11-Jun-07						
4-Methyl-2-pentanone	90.6	5.0	ug/m³ Air	83.2		109	65-135			
trans-1,3-Dichloropropene	97.4	5.0	"	92.4		105	65-135			
Toluene	73.6	5.0	"	76.8		95.8	65-135			
1,1,2-Trichloroethane	106	5.0	"	111		95.5	65-135			
2-Hexanone	77.7	10	"	83.2		93.4	65-135			
Dibromochloromethane	218	5.0	"	174		125	65-135			
Tetrachloroethene	145	5.0	"	138		105	65-135			
1,2-Dibromoethane (EDB)	152	5.0	"	157		96.8	65-135			
Chlorobenzene	85.3	5.0	"	93.6		91.1	65-135			
Ethylbenzene	83.8	5.0	"	88.4		94.8	65-135			
m,p-Xylene	173	5.0	"	177		97.7	65-135			
Styrene	73.4	5.0	"	86.8		84.6	65-135			
o-Xylene	85.2	5.0	"	88.4		96.4	65-135			
Bromoform	1180	20	"	840		140	65-135			QL-1H
1,1,2,2-Tetrachloroethane	90.4	5.0	"	140		64.6	65-135			QL-1L
4-Ethyltoluene	113	5.0	"	100		113	65-135			
1,3,5-Trimethylbenzene	83.1	5.0	"	100		83.1	65-135			
1,2,4-Trimethylbenzene	82.1	5.0	"	100		82.1	65-135			
1,3-Dichlorobenzene	86.0	10	"	122		70.5	65-135			
Benzyl chloride	116	5.0	"	105		110	65-135			
1,4-Dichlorobenzene	83.2	10	"	122		68.2	65-135			
1,2-Dichlorobenzene	76.6	10	"	122		62.8	65-135			QL-1L
1,2,4-Trichlorobenzene	54.2	10	"	151		35.9	65-135			QL-1L
Hexachlorobutadiene	160	10	"	218		73.4	65-135			
Surrogate: Toluene-d8	*93.3*		*"*	*96.2*		*97.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*197*		*"*	*182*		*108*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburne, Briller & Johnson, LLC - Chicago 515 N. State Street, Suite 2200 Chicago, IL 60610	Project: BBJ060807-14 Project Number: Lyons, IL Project Manager: Mr. Kevin McCartney	Reported: 20-Jun-07

Notes and Definitions

QL-1L	The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

E706031

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159

☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 6/7/07

H&P Project # BBJ060807-14

Outside Lab:

Client: Bradburne, Baller + Johnson

Address: 515 N. State Street, Suite 2200

Email: kmccartney@bbjgroup.com Phone: 312-644-5556

Collector: Michele Hargreaves

Page: 1 of 1

Client Project #

Project Contact: Kevin McCartney

Location: Lyons, IL

Fax: 312-644-5555

Turn around time:

EDF: Yes ☐ No ☐

Global ID:

Sample Receipt
Intact: ☐ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No
N/A (Received on Site)

Special Instructions:

Please don't report 1,3-Butadiene

Sample Name	canister # ~~Field Point Name~~	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2				Total # of containers
CCSG-32	# 264		2pm	6/1	air	Summa									X				X					
CCSG-33	# 065		4:30pm	6/1	air	Summa									X				X					
CCSG-35	# 386		10:30am	6/4	air	Summa									X				X					
CCSF-35 t=0	# 158		5:30pm	6/6	air	Summa									X				X					
CCSF-35	# 303		6:30am	6/7	air	Summa									X				X					

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele Hargreaves	BBJ	in R via UPS	H&P	6/8/07	1:49pm
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

APPENDIX D

VILLAGE OF LYONS ORDINANCE 5-18-99-3

Municipality: Lyons

County: Cook

LPC Number: 31715020

OC: 00012803

CERTIFICATION

STATE OF ILLINOIS)
COUNTY OF COOK)
VILLAGE OF LYONS)

I, WILLIAM J. POLICH, VILLAGE CLERK of the Village of Lyons DO HEREBY CERTIFY that the foregoing:

ORDINANCE NO. 5-18-99-3

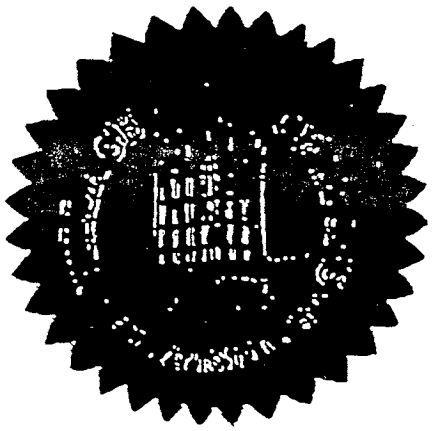
is a true and correct copy of AN ORDINANCE now on file in my office, which said ORDINANCE was approved and passed by the President and Board of Trustees of the Village of Lyons, Illinois aforesaid, on the 18TH day of MAY, 1999.

I DO HEREBY FURTHER CERTIFY that the original of which the foregoing is a true and correct copy, is entrusted to my care and safekeeping.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Corporate Seal of the Village of Lyons aforesaid, at the Village of Lyons, in the County of Cook and the State of Illinois, this 26TH day of MAY, 1999.

William J. Polich

William J, Polich
Village Clerk, C.M.C.
Lyons, Illinois



RELEASABLE
DEC 1 1 2003
REVIEWER MM

VILLAGE OF LYONS

ORDINANCE NO. 5-18-99-3

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS WELLS FOR POTABLE
WATER SUPPLY

ADOPTED BY THE PRESIDENT
AND BOARD OF TRUSTEES
OF THE
VILLAGE OF LYONS

THIS 18TH DAY OF MAY, 1999

Published in pamphlet form by the
authority of the President and
Board of Trustees of the Village
of Lyons, Cook County, Illinois
this 18th day of May, 1999

ORDINANCE NO. 5-18-99-5

AN ORDINANCE AMMENDING VILLAGE
ORDINANCE ARTICLE 7, CHAPTER 4, SECTION 2
WHICH PROHIBITS THE USE OF GROUNDWATER SUPPLY BY THE INSTALLATION
OR USE OF POTABLE WATER WELLS OR ANY OTHER

WHEREAS, certain properties in the Village of Lyons, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class 1 groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 residential remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the Village of Lyons desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of Properties that are the source of said chemical constituents;

NOW, THEREFORE BE IT ORDAINED BY THE VILLAGE BOARD OF THE CIIY VILLAGE OF LYONS:

Section One. Article 7, Chapter 4, Section 2 of the ordinances of the Village of Lyons is repealed and replaced in its entirety by the following:

7-4-2. **Use of groundwater as a potable water supply is prohibited.**
The use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation or drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons.

A. **Penalties.**
Any person violating the Provisions of this ordinance shall be subject to a fine of up to $750.00 for each violation.

B. **Definitions.**
Person is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.
Potable water is any water used for human or domestic consumption including but not limited to, water used for drinking, bathing, swimming, washing dishes or preparing foods.

Memorandum of Understanding. The President of the Village of Lyons is hereby authorized and directed to enter into a Memorandum of Understanding with the Illinois Environmental Protection Agency (Illinois EPA) in which the Village assumes responsibility for tracking remediated sites, notifying the Illinois EPA of changes to this ordinance and taking certain precautions when siting public potable water supply wells.

Section Two: Severability. If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Three: Effective Date. This ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law.

PASSED THIS 18th DAY OF MAY, 1999

AYES: 5

NAYS: 0

ABSENT: One (Trustee TVRDIK)

APPROVED THIS 18th DAY
OF MAY, 1999

David A. Visk
Village President

ATTEST:

William J. Polich, C.M.C.
Village Clerk

APPENDIX K

BB&J PHASE I ESA

October 25, 2007

Village of Lyons c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago, Illinois 60603

Re: **Report of Phase I Environmental Site Assessment**
Lyons Redevelopment
Southwest Corner of Ogden and Lawndale Avenues
Lyons, Illinois
BB&J Project No. 0259001

Dear Mr. Bush:

Bradburne, Briller & Johnson, LLC is pleased to provide you with this *Report of Phase I Environmental Site Assessment* for the Village of Lyons property located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois. This work was performed in accordance with BB&J Proposal No. PN7-0174, dated July 10, 2007.

We appreciate the opportunity to provide you with our environmental consulting services. If you have any questions or require additional information, please call.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

Michele Hargreaves
Staff Scientist

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P.G.
Principal

515 North State Street, Suite 2200, Chicago, Illinois 60610
Voice 312.644.8556 Fax 312.644.8555
www.bbjgroup.com

REPORT OF
PHASE I ENVIRONMENTAL SITE ASSESSMENT

Village of Lyons Property
Southwest Corner of Ogden and Lawndale Avenues
Lyons, Illinois

Submitted to:
Village of Lyons c/o Robert Bush, Esq.
Lyons, Illinois

Prepared by:
Bradburne, Briller & Johnson, LLC
Chicago, Illinois

October 25, 2007

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY i
- 1.1 Overview of Scope of Work iv
- 1.2 Data Gaps iv
- 1.3 Findings v

2.0 Introduction 1
- 2.1 Purpose 1
- 2.2 Detailed Scope-of-Services 1
- 2.3 Significant Assumptions 2
- 2.4 Limitations and Exceptions 2
- 2.5 Special Terms and Conditions 2
- 2.6 User Reliance 2

3.0 Site Description 3
- 3.1 Location and Legal Description 3
- 3.2 Site and Vicinity General Characteristics 3
- 3.3 Current and Historical Use of the Subject Property 4
- 3.4 Descriptions of Structures, Roads, Other Improvements on the Subject Property 7
- 3.5 Current and Historical Uses of the Adjoining Properties 7

4.0 User Provided Information 8
- 4.1 Title Records 8
- 4.2 Environmental Liens or Activity and Use Limitations 8
- 4.3 Specialized Knowledge 8
  - 4.3.1 AE Report 9
  - 4.3.2 DAI CACR 11
  - 4.3.3 DAI Attachments to CACR 12
  - 4.3.4 DAI CACR Amendment 14
  - 4.3.5 BB&J Preliminary Soil Gas Investigation 16
  - 4.3.6 BB&J Phase II ESA: Commercial Development 19
  - 4.3.7 BB&J Phase II ESA: Future Use Evaluation 23
  - 4.3.8 BB&J Phase II ESA: Community Center 26
- 4.4 Commonly Known or Reasonably Attainable Information 29
- 4.5 Valuation Reduction for Environmental Issues 29
- 4.6 Owner, Property Manager, and Occupant Information 29
- 4.7 Reason for Performing Phase I ESA 30
- 4.8 Other 31

5.0 Records Review 31
- 5.1 Standard Environmental Record Sources 32
  - 5.1.1 Subject Property 32
  - 5.1.2 Vicinity Properties 35
- 5.2 Additional Environmental Record Sources 36
- 5.3 Physical Setting Sources 38
- 5.4 Historical Use Information on the Subject Property 40

TABLE OF CONTENTS (continued)

5.4.1 Aerial Photographs 43
5.4.2 Topographic Maps 45
5.4.3 Sanborn Maps 45
5.4.4 City Directories 46
5.5 Historical Use Information on the Adjoining Properties 46

6.0 Site reconnaissance 48
6.1 Methodology and Limiting Conditions 48
6.2 General Site Setting 48
6.3 Exterior Observations 48
6.3.1 Debris Mounds 48
6.3.2 Transformers 49
6.3.3 Asphalt Engineered Barriers 49
6.3.4 Concrete Pit 49
6.3.5 Monitoring Wells 49
6.3.6 Berm 50
6.4 Interior Observations 50
6.4.1 MSC Cleaning Supply Room 50
6.4.2 MSC Floor Drains 50
6.4.3 MSC Sump 51

7.0 Interviews 51
7.1 Interview with Owner 51
7.2 Interview with Site Manager 51
7.3 Interview with Occupants 51
7.4 Interview with Local Government Officials 52
7.5 Interview with Others 52

8.0 Findings 52
8.1 Data Gaps 52
8.2 Findings 53

9.0 CONCLUSIONS 59
9.1 Data Gaps 59
9.2 Findings 60

10.0 OPINION 66

11.0 Deviations 66

12.0 Additional Services 66
12.1 Potential Asbestos-Containing Materials 66
12.2 Potential Lead-based Paint 67

13.0 References 67

14.0 Signatures of Environmental Professionals 68

15.0 Qualifications of Environmental Professionals 69

TABLE OF CONTENTS (continued)

TABLES

Table 1	Summary of ASTM E 1527-05 Information
Table 2	Summary of Historical Records Search
Table 3	Summary of Environmental Records Sources and Contacts

FIGURES

Figure 1	Site Location Map
Figure 2	Site and Vicinity Plan
Figure 3	Site Plan

APPENDICES

Appendix A	Site Photographs
Appendix B	Copy of EDR® Radius Map with GeoCheck®
Appendix C	Copy of Legal Description
Appendix D	Copy of Historical Records
Appendix E	Interview Documentation
Appendix F	Resumes
Appendix G	*Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc., for Palumbo Bros., Inc., dated December 7, 1993
Appendix H	*45-Day Report, Materials Service Corporation Yard 18, Illinois Environmental Management Agency Incident No. 951401*, prepared by DAI Environmental Inc. for MSC, dated January 29 1996 and *Corrective Action Completion Report, MSC – Yard 18 Ogden and Lawndale Site, IEMA Incident No. 951401*, prepared by DAI for MSC, dated March 10, 1998
Appendix I	*Attachments to Site Classification Completion Report / CACR, Lyons / MSC, 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI for MSC, dated July 29, 1999
Appendix J	CACR *Amendment, LPC# 0311715020 – Cook County, MSC – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, LUST Incident# 951401*, prepared by DAI for MSC, dated February 4, 2004
Appendix K	*Report of Limited and Preliminary Soil Gas Investigation*, prepared by BB&J, for the Village of Lyons, dated February 23, 2007 Appendix I
Appendix L	*Report of Phase II Environmental Site Assessment, Commercial Development*, prepared by BB&J, for the Village of Lyons, dated June 13, 2007
Appendix M	*Report of Phase II Environmental Site Assessment, Future Use Evaluation*, prepared by BB&J, for Village of Lyons, dated June 13, 2007
Appendix N	*Report of Phase II Environmental Site Assessment: Community Center*, prepared by BB&J, for the Village of Lyons, dated June 26, 2007

1.0 EXECUTIVE SUMMARY

Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C. (Ancel Glink), legal counsel or the Village of Lyons, engaged Bradburne, Briller & Johnson, LLC (BB&J) on July 10, 2007 to perform a Phase I Environmental Site Assessment (ESA) for the Lyons property located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property).

Ms. Michele Hargreaves of BB&J conducted the site reconnaissance on August 1, 2007. The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a former reportedly clean construction and demolition debris (CCDD) fill operation (Former CCDD Fill Operation) located within a former quarry (Former Quarry) at the Subject Property. The far western portion of the Subject Property is graded down toward the existing quarry on the western adjoining property (Existing Quarry). Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue that is currently operated by Material Services Corporation (MSC), former operator of the Former CCDD Fill Operation and owner of the Subject Property, and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fueling station at the corner of Ogden and Lawndale Avenues. Reliable Materials Lyons, LLC (Reliable), operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD.

At the time of the site reconnaissance, the Subject Property was adjoined to the north by Ogden Avenue, beyond which were Plank Road Meadow and an abandoned auto-repair service station. The adjoining property to the south appeared as the several other MSC buildings (a maintenance and office building) and a vacant lot. The Subject Property was adjoined to the east by Lawndale Avenue and beyond which was a vacant restaurant on the southeast corner of Ogden and Lawndale Avenues, residential and commercial property, and Smith Park. The adjoining property to the west appeared as the Existing Quarry operated by Reliable. The surrounding property appeared as commercial and residential property.

Based on historical records research, the Subject Property consisted of undeveloped property in 1901. Since the 1930s, the Subject Property has consisted of three main areas: a Former Quarry located in the central and western portions of the Subject Property, several structures located in the northeast portion of

the Subject Property at the corner of Ogden and Lawndale Avenues, and several MSC buildings and associated parking lots located in the southeast portion of the Subject Property. More specifically:

Former Quarry / Former CCDD Fill Operation Area

From at least 1939 to 1953, the central and western portions of the Subject Property consisted of a limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. The land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff gray and brown clay and clay fill. Pockets of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet below ground surface (bgs). Additionally, occasional pockets of ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs.

From the early 1980s to 1995 an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the Former Quarry. In 1993, a leak in an underground pipe that connected to a diesel aboveground storage tank (AST) at the Palumbo facility was detected and was designated as Illinois Emergency Management Agency (IEMA) Incident Number 931154. Approximately 100 gallons of diesel fuel were released into the subsurface. An investigation indicated that the diesel fuel migrated to the Existing Quarry wall at the western adjoining property. Approximately 50 cubic yards of petroleum-impacted soil was removed from the asphalt plant at the Subject Property; however, a No Further Remediation (NFR) letter was never issued for the release. According to the Alpha Environmental

Report, concentrations of benzene and several polynulcear aromatic hydrocarbons (PAHs) in soil samples collected from the excavation exceeded IEPA Tiered Approach to Corrective Action Objectives (TACO) Tier 1 soil remediation objectives (ROs) for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway. The former asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as parts of the central portion of the Subject Property, was used as a staging area for CCDD for filling the Existing Quarry by Reliable Lyons, LLC (Reliable). In addition, based upon records reviewed from the Illinois Office of the State Fire Marshall (OSFM), one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the former asphalt plant. The gasoline UST was installed in September 1987 and based upon historic maps of the area, was located directly west of the asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

In addition, there was a pond (Former Pond) located along the former eastern edge of the quarry near the north-central portion of the Subject Property from approximately 1980 to 2006. The pond was filled since 2006, and presently is a level, vacant area.

Northeast Area of Subject Property

There have been several structures on approximately 0.37-acre tract at the northeast of the Subject Property, at the corner of Ogden and Lawndale Avenues. In 1939, this tract was occupied by an apparent residential building. From 1951 to 1980, an apparent fuel station was located at this area. From 1988 to the present, this tract has been vacant. According to information obtained from the Illinois Office of the State Fire Marshal (OSFM), five gasoline USTs, operated by MSC, were installed for the fuel station in 1957 and removed in 1995. During the removal of the USTs, a release of gasoline was documented (IEMA Incident Number 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fuel station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes

at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fuel station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a No Further Remediation (NFR) letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

MSC Buildings in Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. Currently, the north MSC warehouse building is no longer present. Additionally, a portion of the other MSC building located on the Subject Property and along Lawndale Avenue has been razed for redevelopment activities associated with the proposed community center.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD Fill Operation on the western adjoining property was acquired by Reliable.

1.1 Overview of Scope of Work

A site reconnaissance of the Subject Property was performed to identify recognized environmental conditions (RECs), as defined by the American Society for Testing and Materials (ASTM) Practice. Ms. Hargreaves of BB&J conducted the site reconnaissance on August 1, 2007.

1.2 Data Gaps

In preparation of this 2007 Phase I ESA, the following data gaps were identified:

First Developed Use – BB&J was unable to account for historical use of the Subject Property within five year intervals dating back to 1940, as outlined within the ASTM E Practice. Based on historical records research, the Subject Property was undeveloped property in 1901. Since 1901 to the present, the Subject Property has consisted of a Former Quarry, a Former CCDD Fill Operation, a Former Pond, a former fueling station, a former asphalt plant, and office buildings. Documentation reviewed on the Cook County Recorder of Deeds website contained information pertaining to the donation of the Subject Property from MSC to the Village of Lyons. As BB&J was unable to locate documentation regarding ownership of the Former Quarry at the Subject Property, BB&J anticipates that this data gap could materially affect our findings.

Historical Property Operations – BB&J was unable to obtain specific information regarding the Subject Property's historical operations. Based on historical records research, from at least 1939 to 1953, the Subject Property appeared to have operated as a Former Quarry; however, BB&J was unable to locate documentation indicating who owned and operated the Former Quarry during that time. In 1962, the Former Quarry was filled in[1], with the exception of the far western portion of the Subject Property that was graded down toward the quarry on the western adjoining property (Existing Quarry). Other than being identified as a Former CCDD Fill Operation, BB&J could not find more detailed information indicating what materials were used to fill the quarry. Since BB&J was unable to locate documentation regarding historical operations at the Subject Property, including ownership of the Former Quarry and the source of fill material at the quarry, BB&J anticipates that this data gap could materially affect our findings.

1.3 Findings

Subject to the data gaps identified above, and based on BB&J's site reconnaissance and review of historical records, this assessment has revealed the following RECs[2] in connection with the Subject Property:

Historical Asphalt Plant Leaking Underground Pipe Incident – BB&J reviewed documentation that an underground pipe that connected a diesel AST to a historical asphalt plant leaked approximately 100 gallons of diesel fuel into the subsurface. BB&J obtained information from

[1] BB&J attempted to contact MSC regarding the specific nature of the materials used to fill the quarry; however, BB&J has not received a response.

[2] The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground-water, or surface water of the property, ASTM E 1527-05.

the Village of Lyons Building Department which indicated that the asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then by Palumbo Bros., Inc[3]. began operations on the west portion of the Subject Property in the early 1980s. Building records indicate that operations at the historical asphalt plant ceased in 1995. BB&J obtained an *Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc. (AE), for Palumbo Bros., Inc., dated December 7, 1993 (AE Report) which addressed the work performed in response to the diesel release [Illinois Emergency Services and Disaster Agency (IESDA) Incident No. 931154]. The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on-site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the quarry on the west adjoining property, reported "organic material" visible from a single seep along a roadway leading into the west adjoining quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the "organic material" along the roadway. Based on the assumption that the diesel loss and the visible "organic material" were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident No. 931154).

A site reconnaissance of the historic asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2-inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of five to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off-site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a laboratory for analysis of TPH for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel.

Upon confirmation that the material in the quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings

[3] Palumbo Bros. Inc. is the parent company of Orange Crush Recycle Co.

of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off-site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of BTEX and PAHs on May 21, 1993. According to the Alpha Environmental Report, concentrations of benzene and several PAHs in soil samples collected from the excavation exceeded IEPA TACO Tier 1 soil ROs for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway[4]. The historic asphalt plant closed in 1995.

The Environmental Data Resources, Inc. Report (EDR® Report) further identified the aforementioned release as a LUST incident (Incident No. 931154) for a diesel release at the Orange Crush Recycle Co. facility, reported in May 1993. However, according to the EDR® Report, the LUST incident did not receive a NFR letter. BB&J submitted a FOIA request to the Illinois OFSM; however, the Illinois OFSM did not have any information regarding the diesel release from the underground pipe. Due to the (1) absence of documentation of regarding quarterly monitoring and sampling of the ground-water as recommended in the Palumbo Report and (2) Subject Property not having received a NFR to close the LUST incident, BB&J regards the Historical Asphalt Plant Leaking Underground Pipe Incident as an REC.

<u>Historical Former Quarry Filling</u> – Based on historical records research, from at least 1939 to 1953, the central and western portions of the Subject Property consisted of the limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that

[4] It should be noted that one benzene concentration exceeded the Class I soil component of the ground-water ingestion exposure route; however, due to Village of Lyons Ordinance No. 5-18-99-3 which prohibits the use of potable wells, this exceedance was not considered by BB&J. Additionally, a concentration of benzo(a)pyrene exceeded the commercial-industrial ingestion exposure route, but did not exceed the Metropolitan background standards for Metropolitan Areas as indicated in Title 35 IAC 742, Appendix A, Table H.

was graded down toward the Existing Quarry on the western adjoining property[5]. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation[6], BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within five to 55 feet bgs.

Analytical results from the soil samples collected during BB&J's previous investigations in the Former Quarry indicated that several volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and Resource Conservation and Recovery Act (RCRA) metals were found to exceed the IEPA TACO soil ROs. Since (1) documentation regarding the filling of the quarry and nature of material used could not be obtained and (2) the analytical results of the fill material indicated that COCs were present, BB&J regards the Historical Former Quarry Filling as an REC.

In addition, one Historical[7] REC was identified associated with the Subject Property as follows:

<u>Former On-site MSC USTs</u> – Based upon information obtained from FOIA requests to the Illinois OSFM, MSC was identified as using multiple USTs at their facility, with multiple USTs formerly located on the Subject Property which had reportable releases. Information reviewed by BB&J included Notification for UST forms, Application for Permit to Remove UST forms,

[5] BB&J has attempted to contacted MSC regarding the specific nature of the materials used to fill the quarry; however, BB&J has not received a response.
[6] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.
[7] Under the ASTM Practice, a "*historical recognized environmental condition*" is defined as "an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. The final decision rests with the *environmental professional* and will be influenced by the current impact of the *historical recognized environmental condition* on the *property*. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the *property* and has been remediated, with the such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the *Phase I Environmental Site Assessment* report. The environmental professional shall provide an opinion of the current impact on the property of this *historical recognized environmental condition* in the opinion section of the *report*. If the historical recognized environmental condition is determined to be a recognized environmental condition at the time of the *Phase I Environmental Site Assessment* is conducted, the condition shall be identified as such and listed in the conclusions section of the *report*."

Removal Log of UST forms, and subsurface investigative reports. The table below summarizes the UST information reviewed and compiled by BB&J:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported LUST Incident	LUST Incident No.	NFR Letter	On-site / Off-site
1	Diesel	2,000	1981	9/12/1997	NO	NA	NA	Off-site
2	Gasoline	12,000	1978	9/12/1997	YES	971705	YES	Off-site
3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	YES	Off-site
7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
9	Diesel	8,000	5/10/1957	7/31/1997	YES	971392	YES	Off-site
10	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site
11	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site

USTs No. 1 and 2 were located off-site west of the MSC maintenance building. USTs No. 3, 4, 5, 7, and 8 were located in the northeast portion of the Subject Property at the former fueling station. USTs No. 6, 9, 10, and 11 were located off-site near the southeast corner of the current quarry at the intersection of 1st Avenue and 44th Street in Lyons, Illinois.

According to documents received from the Illinois OSFM, during the excavation of USTs No. 3, 4, 5, 7, and 8 in 1995, 330 cubic yards of petroleum-impacted soil and backfill were excavated and disposed off-site. Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from area of the former fueling station and beneath both Ogden and Lawndale Avenues by DAI Environmental Inc. indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. On August 27, 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate those exposure pathways. The NFR letter was released on February 16, 2006 and recorded on title on May 11, 2006. As the on-site USTs have obtained NFR letters for the releases and engineered barriers remain in place, BB&J regards the Former On-site MSC USTs as a Historical REC.

In addition, the following *de minimis*[8] environmental conditions were observed:

Concrete Pit – BB&J observed a concrete pit located on the north central portion of the Subject Property approximately 20 feet south of Ogden Avenue. The concrete pit was approximately four feet deep bgs, seven feet long, and four feet wide. A pipe leading out of the concrete pit toward Ogden Avenue generally in the direction of a storm water manhole cover was visible within the top north middle portion of the pit. Although the use of the concrete pit has not been made definitively, based on (1) its location relative to historic site access and (2) BB&J's general observations, it appears that it may have been formerly used as a weighing scale for trucks entering this part of the Subject Property. Because the pipe situated on the north wall of the concrete pit is (1) located relatively near the storm water manhole cover along Ogden Avenue and (2) oriented generally in that direction, it appears that it was used to drain rain water from the structure. The edges of the concrete pit appeared to be eroding and crumbling. The concrete pit contained approximately 3 feet of rainwater. Although BB&J was unable to observe the condition of the bottom of the pit due to standing water and accumulation of dirt, because of its likely use as a weighing scale for trucks, BB&J regards the Concrete Pit as a *de minimis* environmental condition.

Current Operations at the Subject Property – At the time of the site reconnaissance, the Subject Property consisted of a Former CCDD Fill Operation[9]. Reliable used the central portion of the Subject Property as a staging area that included a large pile of concrete, a pile of asphalt and a pile of bricks. BB&J contacted the IEPA Bureau of Land to determine if the Subject Property had a permit for the fill operation. Mr. Tom Hubbard of the IEPA Bureau of Land stated that MSC has Interim Authorization[10] and that currently permits are not required. Ms. Anna VanOrden, Environmental Protection Specialist, also with the IEPA Bureau of Land, accompanied Ms. Hargreaves on a site reconnaissance of the Subject Property on August 1, 2007. Ms. VanOrden stated that the Interim Authorization was for the filling of the adjacent quarry, operated by Reliable, located west of the Subject Property and not specifically for the Subject Property. BB&J obtained a list of CCDD fill operations that had interim authorization. The list included Reliable Lyons CCDD (site number 0311715020), located at 4226 S. Lawndale Avenue

[8] Conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. ASTM E 1527-05.
[9] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.
[10] Interim Authorization for CCDD fill operations is required under Section 22.51 of the Illinois Environmental Protection Act for sites where clean construction of demolition debris is being used as fill in a current or former quarry, mine, or other excavation.

in Lyons, Cook County, Illinois. Because the observed contents of the debris piles appeared to be predominantly bricks, concrete and asphalt, BB&J regards the Current Operations at the Subject Property as a *de minimis* environmental condition.

Former On-site Historic Asphalt Plant UST – Based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the historic asphalt plant. The gasoline UST was installed in September 1987 and based upon figures of the area, was located directly west of the historic asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995. As the gasoline UST was documented by the Illinois OSFM as not having any releases, BB&J regards the Historic Asphalt Plant UST as a *de minimis* environmental condition.

Off-site Pole-mounted Transformers – BB&J observed three pole-mounted transformers located approximately 100 feet south (sidegradient) of the southern property line. It was unclear if the transformers contained polychlorinated biphenyls (PCBs). The transformers appeared in poor condition; they were rusted, and there was staining on the wood poles supporting the transformers. Due to the off-site and sidegradient location, BB&J regards the Pole-mounted Transformers as a *de minimis* environmental condition.

2.0 INTRODUCTION

Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C. (Ancel Glink), legal council for the Village of Lyons, engaged Bradburne, Briller & Johnson, LLC (BB&J) on July 10, 2007 to perform a Phase I Environmental Site Assessment (ESA) for the Lyons property located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property).

Our report is formatted to present a concise summary of the results of the Phase I ESA. A summary of the information corresponding to the components of the American Society for Testing and Materials (ASTM) Practice for the Subject Property is provided in Table 1. A summary of historical records research is provided as Table 2. A summary of environmental records sources and contacts is provided as Table 3. A site location map of the Subject Property is provided as Figure 1. A site and vicinity plan is provided as Figure 2. A site plan is provided as Figure 3. Site photographs of the Subject Property are provided as Appendix A. The regulatory database information provided by Environmental Data Resources, Inc. (EDR®) of Milford, Connecticut is provided as Appendix B. The legal description for the Subject Property is provided in Appendix C. Historical records are provided as Appendix D and interview documentation is provided as Appendix E. Resumes of those BB&J personnel working on this project are included in Appendix F.

2.1 Purpose

The objective of this Phase I ESA was to identify Recognized Environmental Conditions (RECs) as defined in the ASTM Practice. As defined in Section 3.2.74 of the ASTM Practice, the term REC means, "the presence or likely presence of any *hazardous substances* or *petroleum products* on a *property* under conditions that indicate an existing release, a past release, or a *material threat* of a release of any *hazardous substances* or *petroleum products* into structures on the *property* or into the ground, ground water, or surface water of the *property*. The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not *recognized environmental conditions*.

2.2 Detailed Scope-of-Services

A site reconnaissance of the Subject Property was performed to identify RECs, as described in Section 9 of the ASTM Practice, and to conduct a visual inspection for asbestos containing material (ACM) and

lead based paint (LBP). Our scope of work did not include assessing the Subject Property for the Non-Scope Considerations identified in Section 13 of the ASTM Practice, except as noted in Section 12.0 of this Phase I ESA Report. Ms. Michele Hargreaves of BB&J conducted the site reconnaissance on August 1, 2007.

2.3 Significant Assumptions

BB&J has assumed that the records reviewed in the preparation of this report and that information granted during interviews conducted during the course of the Phase I ESA were accurate, except if noted otherwise herein.

2.4 Limitations and Exceptions

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar conditions, by reputable environmental consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional information contained in this document. Although this assessment has attempted to identify RECs at the Subject Property, the possibility exists for RECs to have escaped detection due to inaccurate government records, unreported historical environmental accidents, or the presence of hazardous substances or petroleum products in buried, concealed or inaccessible areas.

2.5 Special Terms and Conditions

The terms and conditions under which this report has been prepared are described in BB&J proposal PN7-0174.

2.6 User Reliance

This report was prepared for the specific use of the Village of Lyons under an agreed upon scope of work, terms and conditions. Reliance on this document by any party other than the Village of Lyons may occur only upon the express written consent of BB&J. Such reliance shall be subject to the terms and conditions agreed upon between BB&J and the Village of Lyons and only to the extent appropriate in light of any limitations placed on the scope, nature and type of BB&J's services as stated in BB&J's proposal for this project and/or this Phase I ESA Report. The services provided have been performed for the Village of Lyons and this Phase I ESA Report may not be suitable for any and/or all of the purposes of a relying party. Use of this Phase I ESA Report for purposes beyond those reasonably intended by the Village of Lyons and BB&J will be at the sole risk of the user.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

Ancel Glink, on behalf of the Village of Lyons, engaged BB&J to perform a Phase I ESA of the Lyons property located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois.

BB&J obtained a copy of the legal description for the Subject Property located within the *Special Warranty Deed with Restrictive Covenants* obtained from the Cook County Recorder of Deeds. The Subject Property consisted of portions of PIN: 18-02-207-003; -004; -009, and -011. The legal description is included in Appendix C.

3.2 Site and Vicinity General Characteristics

The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a former reportedly clean construction and demolition debris (CCDD) fill operation (Former CCDD Fill Operation) located within a former quarry (Former Quarry) at the Subject Property. The far western portion of the Subject Property is graded down toward the existing quarry on the western adjoining property (Existing Quarry). Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue that is currently operated by Material Services Corporation (MSC), former operator of the Former CCDD Fill Operation and owner of the Subject Property, and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fueling station at the corner of Ogden and Lawndale Avenues. Reliable Materials Lyons, LLC (Reliable), operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD.

At the time of the site reconnaissance, the Subject Property was adjoined to the north by Ogden Avenue, beyond which was Plank Road Meadow and an abandoned auto-repair service station. The adjoining property to the south appeared as the several other MSC buildings (a maintenance and office building) and a vacant lot. The Subject Property was adjoined to the east by Lawndale Avenue and beyond which was a vacant restaurant on the southeast corner of Ogden and Lawndale Avenues, residential and commercial property, and Smith Park. The adjoining property to the west appeared as the Existing

Quarry operated by Reliable. The surrounding property appeared predominantly as commercial and residential property.

3.3 Current and Historical Use of the Subject Property

The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a reportedly Former CCDD Fill Operation located within a former quarry (Former Quarry) at the Subject Property. The far western portion of the Subject Property is graded down toward the Existing Quarry on the west adjoining property. Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue where MSC is currently a tenant. MSC was the former operator of the Former CCDD Fill Operation, and former owner of the Subject Property and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fueling station at the corner of Ogden and Lawndale Avenues. Reliable, operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD.

Based on historical records research, the Subject Property consisted of undeveloped property in 1901. Since the 1930s, the Subject Property has consisted of three main areas: a Former Quarry located in the central and western portions of the Subject Property, several structures located in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues, and several MSC buildings and associated parking lots located in the southeast portion of the Subject Property. More specifically:

Former Quarry / Former CCDD Fill Operation Area

From at least 1939 to 1953, the central and western portions of the Subject Property consisted of a limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. The land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing

Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff gray and brown clay and clay fill. Pockets of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet below ground surface (bgs). Additionally, occasional pockets of ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs.

From the early 1980s to 1995 an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the Former Quarry. In 1993, a leak in an underground pipe that connected to a diesel aboveground storage tank (AST) at the Palumbo facility was detected and was designated as Illinois Emergency Management Agency (IEMA) Incident Number 931154. Approximately 100 gallons of diesel fuel were released into the subsurface. An investigation indicated that the diesel fuel migrated to the Existing Quarry wall at the western adjoining property. Approximately 50 cubic yards of petroleum-impacted soil was removed from the asphalt plant at the Subject Property; however, a No Further Remediation (NFR) letter was never issued for the release. According to the Alpha Environmental Report, concentrations of benzene and several polynulcear aromatic hydrocarbons (PAHs) in soil samples collected from the excavation exceeded IEPA Tiered Approach to Corrective Action Objectives (TACO) Tier 1 soil remediation objectives (ROs) for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway. The former asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as parts of the central portion of the Subject Property, was used as a staging area for CCDD for filling the Existing Quarry by Reliable Lyons, LLC (Reliable). In addition, based upon records reviewed from the Illinois Office of the State Fire Marshall (OSFM), one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the former asphalt plant. The gasoline UST was installed in September 1987 and based upon historic maps of the area, was located directly west of the asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, “no apparent contamination [was] observed”, as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be

collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

In addition, there was a pond (Former Pond) located along the former eastern edge of the quarry near the north-central portion of the Subject Property from approximately 1980 to 2006. The pond was filled since 2006, and presently is a level, vacant area.

Northeast Area of Subject Property

There have been several structures on approximately 0.37-acre tract at the northeast of the Subject Property, at the corner of Ogden and Lawndale Avenues. In 1939, this tract was occupied by an apparent residential building. From 1951 to 1980, an apparent fuel station was located at this area. From 1988 to the present, this tract has been vacant. According to information obtained from the Illinois Office of the State Fire Marshal (OSFM), five gasoline USTs, operated by MSC, were installed for the fuel station in 1957 and removed in 1995. During the removal of the USTs, a release of gasoline was documented (IEMA Incident Number 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fuel station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fuel station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a No Further Remediation (NFR) letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

MSC Buildings in Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. Currently, the

north MSC warehouse building is no longer present. Additionally, a portion of the other MSC building located on the Subject Property and along Lawndale Avenue has been razed for redevelopment activities associated with the proposed community center.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD Fill Operation on the western adjoining property was acquired by Reliable.

3.4 Descriptions of Structures, Roads, Other Improvements on the Subject Property

Descriptions of structures, roads and other improvements are provided in Section 3.3, with additional detail presented in Table 1 and Figures 1 and 2.

3.5 Current and Historical Uses of the Adjoining Properties

At the time of the site reconnaissance, the Subject Property was adjoined to the north by Ogden Avenue, beyond which were Plank Road Meadow and an abandoned auto-repair service station. Several MSC buildings (a maintenance and office building) and a vacant lot were observed on the adjoining property to the south. The Subject Property was adjoined to the east by Lawndale Avenue and beyond which was a vacant restaurant on the southeast corner of Ogden and Lawndale Avenues, residential and commercial property, and Smith Park. The adjoining property to the west appeared as the Existing Quarry operated by Reliable. The surrounding property appeared predominantly as commercial and residential property.

The adjoining property to the north appeared as Ogden Avenue and beyond that as the Des Plaines River from at least 1901 to 1953. From at least 1963 to the present the adjoining property to the north appeared as Ogden Avenue and beyond that as Plank Road Meadow Park, the Des Plaines River and a structure formerly occupied by an auto service station was located northeast of the Subject Property, which at the time of the site reconnaissance was vacant.

The adjoining property to the south appeared as undeveloped property in 1901. Several of the structures currently occupied by MSC were present by 1939. From 1939 to the present, the south adjoining property appeared as two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot.

The adjoining property to the east appeared as Lawndale Avenue and beyond that as a mix of residential and commercial property from 1901 to the late 1970s. Since the late 1970s to the present, the adjoining

property to the east appeared as Lawndale Avenue and beyond that as commercial and residential property and Smith Park[11].

The adjoining property to the west appeared as undeveloped property in 1901, and as the Existing Quarry and beyond that as undeveloped property in 1939. From at least 1951 to 2002, the adjoining property to the west appeared as a roughly circular Existing Quarry.

4.0 USER PROVIDED INFORMATION

Pursuant to requirements specified in ASTM E 1527-05, answers to a user questionnaire were provided by the Village of Lyons, the Subject Property owner. Details concerning answers to the questionnaire are summarized below and a copy of these responses are provided in Appendix E.

4.1 Title Records

No title records were provided to BB&J for the Subject Property.

4.2 Environmental Liens or Activity and Use Limitations

Based upon information received from the Illinois OSFM, an engineered barrier is in place in the northeast portion of the Subject Property in the location of a former gasoline station. Based upon subsurface investigations, benzene and PAHs were detected at concentrations above IEPA TACO Tier 1 soil ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the former gasoline station property. On August 27, 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate those exposure pathways. The NFR letter for the former gasoline station was released on February 16, 2006 and recorded on title on May 11, 2006.

4.3 Specialized Knowledge

BB&J obtained copies and partial copies of historical environmental reports and documentation pertaining to the Subject Property. The most pertinent of which are listed and summarized below:

- *Environmental Remediation Report & Monitoring Plan at Palumbo Bros. Inc Lyons Asphalt Plant*, prepared by Alpha Environmental, Inc. (AE), for Palumbo Bros., Inc., dated December 7, 1993 (AE Report);

[11] Mr. James Barthel, head of the Building Department of the Village of Lyons, was interviewed by BB&J on October 10, 2007 regarding the development of Smith Park. To the best of his knowledge, the Subject Property was redeveloped as Smith Park in the late 1970s.

- *45-Day Report, Materials Service Corporation (MSC) Yard 18, Illinois Environmental Management Agency (IEMA) Incident No. 951401*, prepared by DAI Environmental Inc. (DAI) for MSC, dated January 29 1996 (DAI 45-Day Report) and *Corrective Action Completion Report* (CACR)*, MSC – Yard 18 Ogden and Lawndale Site, IEMA Incident No. 951401*, prepared by DAI for MSC, dated March 10, 1998 (DAI CACR);

- *Attachments to Site Classification Completion Report / CACR, Lyons / MSC, 4226 South Lawndale Avenue, Lyons, Illinois LPC# 0311715020*, prepared by DAI for MSC, dated July 29, 1999 (DAI Attachments to CACR);

- CACR *Amendment, LPC# 0311715020 – Cook County, MSC – Yard 18 Lawndale Ogden, 4226 South Lawndale Avenue, LUST Incident# 951401*, prepared by DAI for MSC, dated February 4, 2004 (DAI CACR Amendment);

- *Report of Limited and Preliminary Soil Gas Investigation*, prepared by BB&J, for the Village of Lyons, dated February 23, 2007 (BB&J 2007 Preliminary Soil Gas Investigation);

- *Report of Phase II Environmental Site Assessment, Strategy and Sampling – Commercial Development*, prepared by BB&J, for the Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Commercial Development);

- *Report of Phase II Environmental Site Assessment, Future Use Evaluation*, prepared by BB&J, for Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Future Use); and,

- *Report of Phase II Environmental Site Assessment: Strategy and Sampling – Community Center*, prepared by BB&J, for the Village of Lyons, dated June 26, 2007 (BB&J Phase II ESA: Community Center).

4.3.1 AE Report

The AE Report addressed the work performed in response to a diesel release from an underground pipe connected to a diesel AST at the historic asphalt plant operations, operated by Palumbo Bros. Inc. [(Palumbo), parent company of Orange Crush Recycle, Co.], on the west portion of the Subject Property. MSC owned the property the asphalt plant occupied during the date of the AE Report.

The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on-site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the quarry on the west adjoining property, reported “organic material” visible from a single seep along a roadway leading into the west adjoining quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the “organic material” along the roadway. Based on the assumption that the diesel loss and the visible “organic material” were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident No. 931154).

A site reconnaissance of the historic asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2-inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of five to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off-site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a laboratory for analysis of total petroleum hydrocarbons (TPH) for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel. . However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway[12].

Upon confirmation that the material in the quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off-site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of benzene, toluene, ethylbenzene (BTEX) and PAHs on May 21, 1993. According to the AE Report, the concentrations of BTEX and PAHs exceeded IEPA Tier 1 soil ROs.

Based upon the review of "historic information, anecdotal interviews, and physical observations," AE concluded the Palumbo asphalt plant was located within the filled-in area of the former quarry, and as such, AE determined that a "conventional subsurface investigation and ground-water recovery system for this site are not considered feasible." AE proposed quarterly monitoring of the recovery trench near the seep along the sidewall of the quarry roadway to detect concentrations of diesel fuel. Upon two consecutive quarters where the water quality no longer contained detectable concentrations of diesel fuel, AE stated they would prepare a report documenting the sampling activities and request that the IEPA consider the IEMA Incident closed. However, no further documentation regarding additional quarterly

[12] It should be noted that one benzene concentration exceeded the Class I soil component of the ground-water ingestion exposure route; however, due to Village of Lyons Ordinance No. 5-18-99-3 which prohibits the use of potable wells, this exceedance was not considered by BB&J. Additionally, a concentration of benzo(a)pyrene exceeded the commercial-industrial ingestion exposure route, but did not exceed the Metropolitan background standards for Metropolitan Areas as indicated in Title 35 IAC 742, Appendix A, Table H.

sampling events was provided within the AE Report. Further, the IEMA Incident No. 931154 remains open as of the date of this Phase I ESA.

4.3.2 DAI CACR

According to the 45-Day DAI Report, DAI CACR, and attachments therein, five USTs were removed on June 27, 1995 from the former fueling station located at the intersection of Ogden and Lawndale Avenues in the northeast portion of the Subject Property. This property consists of approximately 0.368 acres and was not located within the boundaries of the Former Quarry / Former CCDD Fill Operation. The table below summarizes the UST information reviewed by BB&J from the 45-Day Report and DAI CACR:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported IEMA Incident	IEMA Incident No.	On-site / Off-site
MSC18-3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	On-site
MSC18-4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On-site
MSC18-5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On-site
MSC18-6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	Off-site
MSC18-7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	On-site
MSC18-8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	On-site

It should be noted that UST ID No. MSC18-6, also referred to as the UST located at the Haffner site in the 45-Day DAI Report and DAI CACR, is not located at the Subject Property. Rather, the location of this UST is approximately 1/2-mile to the southwest near the intersection of 44th Place and Riverside Avenue. It appears that this UST is included within the 45-Day DAI Report and CACR and given the same Incident No. as the on-site USTs because the USTs were removed by the same company[13] on consecutive days and both locations of USTs had observed releases.

Prior to removal of the on-site former fueling station USTs, 11 soil borings were advanced in the area of the USTs on March 14, 1995 to determine the extent of the upcoming excavation around the USTs. A total of nine soil samples from nine soil borings were submitted for laboratory analysis of BTEX and PAHs. Sampling methodology and depths of the soil samples were not described or recorded within the 45-Day DAI Report or DAI CACR or on the laboratory chain of custody. Results of the investigation

[13] Waterways Transportation Services

indicated that multiple soil samples contained concentrations of BTEX and PAHs above the above IEPA TACO Tier 1 residential soil ROs for the soil inhalation and soil ingestion exposure routes.

As noted above, a release (Incident No. 951401) was observed during the removal of the USTs at the Subject Property on June 27, 1995. Approximately 330 cubic yards of petroleum-impacted soil and backfill were excavated from the UST excavations in central portion from the former fueling station and disposed off-site. Additionally, no free product was observed. The DAI CACR requested a No Further Remediation (NFR) letter for the Subject Property via institutional controls (Village of Lyons, IL ground-water ordinance No. 5-18-99-3) and an engineered barrier (existence of three feet of clean top soil, presumably above the soil samples that were collected at the former fueling station during the subsurface investigation).

4.3.3 DAI Attachments to CACR

According to the DAI Attachments to CACR, the IEPA rejected DAI's request for the NFR letter on "the basis that the extent of soil and ground-water contamination has not been fully investigated/delineated." A *Site Classification WorkPlan*, prepared by DAI, and dated August 3, 1998 (DAI 1998 Workplan), was submitted to the IEPA per the IEPA's request for further investigation. The IEPA approved the DAI 1998 Workplan on December 2, 1998 pending four modifications. The four modifications were not described within the DAI Attachments to CACR.

In February and May 1999, 15 soil borings were advanced at the former fueling station property for the collection of soil samples to further delineate the petroleum impacts (See Table 5). Soil borings were installed to a depth of approximately 10 feet bgs where bedrock was encountered. The soil samples were submitted for one or more of the following constituents of concern (COCs):

- Volatile organic compounds (VOCs);
- PAHs,
- Total organic carbon (TOC);
- Toxicity characteristic leachate procedure (TCLP) lead;
- Lead
- Paint filter and flashpoint; and,
- pH

During this investigation, the results of the analytical results were compared to Tier 1 soil ROs for industrial/commercial property. According to the DAI Attachments to CACR, DAI only considered exceedances of the soil ROs as follows: "soil ingestion exposure pathway for vadose zone soil contamination within three feet bgs and the soil inhalation exposure pathway is only a consideration for vadose zone soil contamination within 10 feet bgs." Following this approach, concentrations of benzene exceeded the RO for the inhalation exposure route in soil samples collected within 10 feet bgs in an area along Ogden Avenue on the north and west portions of the former fueling station property. Additionally, concentrations of PAHs exceeded the ROs for the ingestion exposure route in soil samples within three feet bgs in an area along Lawndale Avenue on the east portion of the property and along Ogden Avenue on the northwest portion of the property. The DAI Attachments to CACR proposed installing two asphalt caps in these two areas to serve as engineered barriers to the subsurface to eliminate those exposure pathways.

In addition, one soil sample collected from the southeast portion of the former fueling station property exceeded the Tier 1 RO for TCLP lead; however, the DAI Attachments to CACR stated that the concentrations of lead and TCLP lead in the other analyzed soil samples were at or below background concentrations near the potential source areas (i.e., the former USTs). Further, DAI determined that the TCLP lead concentration did not exceed the Tier 1 RO when using the TACO R26 calculation to determine the modeled concentration at the downgradient Village of Lyons municipal boundary.

Furthermore, four of the soil borings, from the north, south, east, and west corners of the Subject Property, respectively, were converted into permanent monitoring wells for collection of ground-water samples. Ground-water samples were collected from the other three monitoring wells and submitted for laboratory analysis of the following:

- BTEX;
- PAHs; and,
- Lead.

Only one of the ground-water samples, from the west corner of the former fueling station property, exceeded the Tier 1 ground-water RO for one of the analytes (lead). However, the concentration did not exceed the DAI proposed Tier 2 ground-water RO developed using the TACO R26 calculation. It should be noted that the monitoring well located in the south corner was unable to be sampled due to a lack of ground-water. In addition, DAI also determined the hydraulic gradient was to the west-southwest with a hydraulic conductivity ranging from five to 6.5 centimeters per day (cm/d).

According to the DAI Attachments to CACR, based upon the findings during this investigation and the previous investigations, DAI requested a NFR letter based upon the following:

- The ground-water exposure route and the soil component of the ground-water ingestion pathway "should be excluded due to the Village of Lyons ground-water ordinance (No. 5-18-99-3)";
- "Ground-water contamination and residual soil contamination migrating from soil to ground-water will have attenuated below levels below the Tier 1 ground-water ROs before encountering the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling"; and,
- The remaining "contamination above Tier 1 industrial/commercial soil ROs for the soil inhalation and ingestion exposure pathways will be covered by an engineered barrier". (See Appendix F)

4.3.4 DAI CACR Amendment

As summarized in the DAI CACR Amendment, the DAI Attachments to CACR for the former fueling station property was denied by the IEPA in a letter dated January 27, 2000 for the following six reasons:

- *"The extent of benzene contaminated soils in excess of Tier 1 ROs was not defined beyond the property boundary north of SB-9. The extent must be defined…"*
- *"The report* (DAI Attachments to CACR) *indicated only gasoline is the material that was released at the Ogden and Lawndale site. Therefore, the only indicator contaminants required to be addressed are BTEX..."*
- *"As a result of Item 2 above, the areas to be covered by an engineered barrier need to be re-evaluated. It appears the area in the vicinity of SB-6 located along the eastern edge of the property adjacent to Lawndale Avenue will not require an engineered barrier…"*
- *"The IEPA disapproves of the input parameters used to perform Equation R26. Specifically, there was no demonstration made to determine how far the contamination plume will extend onto off-site properties…Since no information was provided for the ground-water mixing zone thickness, the default value for 200 cm should have been used..."*
- *"The IEPA will determine if the ground-water ordinance for the Village of Lyons will satisfy the requirements to be used as an acceptable institutional control..."*
- *The IEPA has not received a High Priority Corrective Action Plan and associated budget. This information may be submitted separately or concurrently with the High Priority Corrective Action Completion Report.*

According to the DAI CACR Amendment, in response to the IEPA's letter, DAI completed a High Priority CAP and Budget dated March 7, 2002. Briefly, below are highlights from this response:

- Upon obtaining approval from the Illinois Department of Transportation (IDOT), DAI advanced four soil borings to bedrock (approximately 10.5 feet bgs) within Ogden and Lawndale Avenues north of the former fueling station. Two soil samples were collected from three of the soil borings at depths of three to five feet bgs and five to seven feet bgs, while the soil samples collected from the other soil boring were at depths of five to seven feet bgs and seven to nine feet bgs. Soil samples were submitted for laboratory analysis of BTEX and PAHs. None of the soil samples contained concentrations of BTEX or PAHs above the most stringent Tier 1 residential soil ROs. DAI concluded that the "extent of off-site petroleum contamination can be estimated by extrapolation between direct measurements";

- DAI stated that during conversations with IEPA and MSC, the former USTs at the former fueling station property stored both gasoline and diesel fuel. Therefore, BTEX, PAHs, and lead were considered appropriate indicator compounds and "MSC is responsible for evaluating and performing corrective actions for BTEX, PNA, and lead contamination from LUST Incident No. 951401";

- DAI indicated that because PAHs are the appropriate indicator compounds due to diesel fuel used in the USTs, the engineered barriers would be necessary to mitigate the soil ingestion and inhalation exposure pathways for the exceedances of PAHs in those areas; and,

- DAI stated the parameters for the R26 calculation would be revised in the DAI CACR Amendment.

As indicated in the DAI CACR Amendment, the IEPA approved the CAP on July 25, 2002 with five comments which DAI addressed in the DAI CACR Amendment, including:

- *"A revised CACR…should contain the following information: a) the revised R26 calculations demonstrating that contaminated groundwater does not extend across Ogden or Lawndale Avenues….b) ground-water flow diagrams…c) Highway Authority Agreements for Ogden and Lawndale Avenues…and, d) demonstration that an asphalt cover (the proposed engineered barrier) has been placed over the areas depicted in the Figure 9 of the July 29, 1999 report."*

  DAI completed the R26 calculations which showed the concentrations of BTEX and PAHs in question would attenuate to concentrations below Tier 1 Class II ground-water ROs and soil ingestion and inhalation ROs before crossing Ogden or Lawndale Avenues. Appendices within the DAI CACR Amendment also included: (1) the requested ground-water flow diagram, (2) the requested Highway Authority Agreement with IDOT allowing for ground-water and soil impacts under Ogden and Lawndale Avenues to remain in place, and (3) requested locations and photographs from August 27, 2003, of the two asphalt barriers installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways.

- *"No additional soil or ground-water samples should be collected at this time."*

  DAI stated no additional soil or ground-water samples were collected.

- *"IEPA is satisfied that all soil contamination does not migrate across Ogden and Lawndale Avenue, though a Highway Authority Agreement developed in accordance with 35 IAC 742.1020 with the highway authority over these roadways should still be developed for IEPA review and approval."*

As noted above, DAI included as an appendix in the DAI CACR Amendment a copy of the Highway Authority Agreement with IDOT allowing for ground-water and soil beneath Ogden and Lawndale Avenues to be left in place.

- *"The ground-water ordinance enacted by the Village of Lyons has been approved by IEPA for use as an institutional control to address the ground-water ingestion exposure route."*

  DAI indicated that the CACR will rely upon the IEPA approved ground-water use prohibition enacted by the Village of Lyons.

- *"It does not appear as though the lead is a COC. In addition, it does not appear as though the lead detected at location SB-14* (in the southeast portion of the property) *is the result of a release from the USTs."*

  DAI agreed that lead should not be considered a COC.

Further, DAI requested a NFR letter based upon the following recommendations previously submitted:

- The ground-water exposure route and the soil component of the ground-water ingestion pathway "should be excluded due to the Village of Lyons ground-water ordinance (No. 5-18-99-3)";

- "Ground-water contamination and residual soil contamination migrating from soil to ground-water will have attenuated below levels below the Tier 1 ground-water ROs before encountering the closest downgradient point of human exposure, the Village of Lyons municipal boundary, according to TACO R12 and R26 modeling"; and,

- The remaining "contamination above Tier 1 industrial/commercial soil ROs for the soil inhalation and ingestion exposure pathways has been covered by an engineered barrier".

Subsequent documentation from the IEPA indicated that the IEPA issued the NFR letter on February 16, 2006 for the IEMA Incident No. 951401 at the former fueling station on the northeast portion of the Subject Property, in conjunction with the leaking diesel UST (Haffner site) located approximately 1/2-mile southwest of the former fueling station near the intersection of 44th Place and Riverside Avenue. The NFR letter was recorded on title on May 11, 2006.

4.3.5 BB&J Preliminary Soil Gas Investigation

The BB&J Preliminary Soil Gas Investigation was conducted to determine the potential for subsurface COCs to be present associated with the historical land filling operations focused primarily within the central and western portions of the Subject Property. Since the specific nature and origin of the fill material used to fill the Former Quarry was unknown beyond the fill material consisting of CCDD material[14], BB&J conducted a preliminary soil gas investigation to determine the potential presence of COCs. The BB&J Preliminary Soil Gas Investigation included an evaluation of the potential COCs

regarding a proposed residential development located throughout the central portion of the Subject Property, as well as a proposed municipal community center located along the south-central portion of the Subject Property.

The scope of work included the collection of a total of 15 soil gas samples collected primarily throughout the central portion of Subject Property within the subsurface of what was initially proposed to be a residential town home development and the proposed community center. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted for laboratory analysis of VOCs by United States Environmental Protection Agency (USEPA) Method TO-15 and methane by USEPA Method 8015B.

VOCs including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents were detected in the soil gas samples collected in the central portion of the Subject Property. Of these, the following COCs were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentration for Estimated Risk-based Soil Gas Standards[15] under a proposed town home scenario:

- Benzene;
- TCE; and,
- Vinyl Chloride.

In addition to the VOCs detected at the proposed townhomes, two of the 11 soil gas samples contained concentrations within the lower explosive limit (LEL) and upper explosive limit (UEL), and are considered to be within the explosive range for methane[16]. As previously indicated, however, a residential scenario is no longer being considered for the Subject Property. As of the date of this report, <u>no residential redevelopment is proposed for any portions of the Subject Property</u>. It should also be noted that the most conservative residential default exposure factors were used in the USEPA J&E model in these locations due to the former proposed residential use of this area of the Subject Property.

For samples collected in the vicinity of where the proposed community center was originally intended to be located, VOCs including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected in the central portion of the

[14] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.
[15] These J&E calculations used residential default exposure factors due to the intended residential use of the proposed townhomes.
[16] According to the National Fire Protection Association (NFPA), the LEL for methane is 5.0%, while the UEL is 15%.

Subject Property. Furthermore, the following COCs were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards under a commercial scenario:

- Benzene;
- Carbon tetrachloride;
- 1,2-Dichloroethane;
- cis-1,2-Dichloroethane;
- Ethylbenzene;
- TCE; and,
- Vinyl chloride.

Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act [(CERCLA) i.e., Superfund] risk assessment, modeled cancer risks in this scenario were on the order of approximately 1,000 times greater than the 10^{-6} bench mark used for risk assessment purposes. This risk is driven primarily by the high concentrations of vinyl chloride and TCE. In addition to the VOCs detected at the proposed community center, two of the four soil gas samples in this location contained concentrations within the explosive range for methane.

For purposes of comparison, tables within the BB&J Preliminary Soil Gas Survey depict whether the known concentrations of soil gas detected at the proposed community center would have the potential to exceed Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs) for air contaminants, as identified in 29 CFR Part 1910 Occupational Safety and Health Standards "Limits for Air Contaminants" Tables Z-1 and Z-2. The OSHA PELs are based on 8-hour time weighted averages (TWAs). <u>None of the COCs detected in the soil gas samples from the proposed community center exceeded the OSHA PELs</u>; however, it should be noted that the OSHA PELs are more typically applied in industrial settings rather than a non-industrial workplace setting, such as the proposed community center. In addition, town hall meetings involving residents could be considered by IEPA or USEPA to constitute a non-workplace usage of the community center. Consequently, the OSHA PELs may constitute a less conservative standard, but possibly less applicable standard relative to those presented in Table 2 of the BB&J Preliminary Soil Gas Survey.

BB&J indicated that possible remedies to limit the exposure of these VOCs to the inhabitants of the proposed town homes and community center include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. Additionally, to ensure that methane would not accumulate beneath or within the proposed structures at the Subject Property, proper venting of those structures would be required to reduce the potential for explosions to occur.

However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

It should be noted, however, that the proposed residential town homes and the proposed community center structure are no longer planned to be located at the locations atop where the soil gas samples were collected. As of the date of this report, no residential redevelopment is proposed for any portions of the Subject Property. Furthermore, the proposed community center has been moved to the location of the current MSC asphalt parking lot and building which was the south adjoining property at the date of the BB&J Preliminary Soil Gas Survey. The MSC asphalt parking lot and office building were not located on the Former Quarry / Former CCDD Fill Operation. Additionally, as discussed in greater detail below, soil flux samples were collected primarily in the western and central areas of the Subject Property surrounding the locations of the soil gas samples noted above as discussed in the BB&J Phase II ESA: Future Use Evaluation, to evaluate the potential human health effects of leaving these areas open. As discussed further in Section 4.3.7, the concentrations of COCs present in these soil gas samples were shown to dissipate to acceptable concentrations in open-air conditions or be absent by the time the gases migrated to the surface level.

4.3.6 BB&J Phase II ESA: Commercial Development

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted near the north edge of the Former Quarry / Former CCDD Fill Operation. The report indicated that BB&J collected 18 soil samples ranging from the surface to 60 feet bgs from 12 geotechnical borings and four ground-water samples from four permanent monitoring wells. The 12 geotechnical borings, and the subsequent four monitoring wells, were advanced to bedrock in each location. The geotechnical borings ranged from approximately five to 60 feet bgs.

Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A; and,
- pH by USEPA Method 4500H+B.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(a)pyrene {SB-3 (3.5 – 5 feet bgs)], [SB-5 vicinity (0 – 1 feet bgs)], [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs);
- Indeno(1,2,23-cd)pyrene [SB-7 (6 – 7.5 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Inhalation Exposure Route for Industrial-Commercial Property

- Naphthalene [SB-7 (58.5 – 60 feet bgs)].

Soil Ingestion Exposure Route for Construction Worker for Industrial-Commercial Property

- Benzo(a)pyrene [SB-7 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Total xylenes [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Naphthalene [SB-5 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Mercury [SB-3 (3.5 – 5 feet bgs)], [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzene [SB-7 (6 – 7.5 feet bgs)];
- Vinyl chloride [SB-3 (3.5 – 5 feet bgs)];
- Benzo(a)pyrene [(SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Indeno(1,2,3-cd)pyrene [SB-7 (6 – 7.5 feet bgs)];
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)]; and,
- Arsenic [SB-3 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Benzo(a)anthracene [SB-7 (6 – 7.5 feet bgs)];
- Benzo(b)fluoranthene [SB-7 (6 – 7.5 feet bgs)];
- Carbazole [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)];
- Dibenzo(a,h)anthracene [SB-7 (6 – 7.5 feet bgs); and,
- Naphthalene [SB-7 (6 – 7.5 feet bgs)], [SB-7 (58.5 – 60 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' Memorandum of Understanding (MOU) with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA[17].

The analytical results indicated that the following constituents were found to exceed the IEPA Tiered Approach to Corrective Action (TACO) Tier 1 ground-water ROs (locations in parentheses):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Cadmium (MW-5); and,
- Lead (MW-10), (MW-12).

[17] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

With respect to ground-water, no constituents were present above TACO Tier 1 ROs for Class II ground-water, and the Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as potable water. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground-water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

BB&J also conducted a second limited soil gas survey from three locations within the proposed commercial buildings on the north portion of the Subject Property. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted for laboratory analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B. The modeled results of the soil gas investigation indicated that PCE and TCE had the potential to accumulate within one of the proposed commercial developments at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA (i.e., Superfund) risk assessment, modeled cancer risk exceeded the benchmark 10^{-6} (i.e., one in a million) cancer risk in the commercial scenario. This elevated risk is driven primarily by the presence of PCE and TCE. Results of the limited soil gas survey also indicated that concentrations of methane were not detected within the explosive range in all three locations.

It was noted that "(1) the Johnson-Ettinger model (the model used to the predict the target concentrations to compare to the soil gas concentrations detected bgs) is inherently conservative and (2) new soil is continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings." Furthermore, BB&J suggested that to limit the exposure to these constituents, possible remedies included a subsurface vapor barrier with engineered venting systems installed below the proposed structures. Additionally, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,

- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

It should be noted, however, that the proposed commercial buildings are no longer planned to be located at the locations atop where the soil gas samples were collected. As of the date of this report, the proposed commercial buildings are to be moved north toward Ogden Avenue and away from the Former Quarry / Former CCDD Fill Operation.

It should also be noted that the southeast portion of the current Subject Property, which currently consists of the MSC office building and associated asphalt parking lot, was not part of the Subject during the time the February 2007 Preliminary Soil Gas Investigation was completed.

4.3.7 BB&J Phase II ESA: Future Use Evaluation

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation. Specifically, BB&J collected three soil samples and three soil gas samples from the former southeastern portion of the Subject Property. BB&J also conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the central portion of the Subject Property and to provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property. Each of the soil samples were submitted for laboratory analysis of the following:

- VOCs by United States USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

In the BB&J Phase II ESA: Future Use Evaluation, BB&J compared the soil analytical results to IEPA TACO Tier 1 soil ROs for residential, as well as for industrial-commercial properties, as the locations of the soil probes were initially located within the proposed recreational use area of the Subject Property. However, the area where the three soil samples were collected is no longer proposed as the recreational

use area. Rather, this area is proposed to be covered by the footprint of the proposed community center. Therefore, the analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs for industrial-industrial property (sample locations in brackets, depths in parentheses):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [GP-1 (0 – 2 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Mercury [GP-1 (0 – 2 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene [GP-1 (0 – 2 feet bgs)]; and,
- Carbazole [GP-1 (0 – 2 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate than the Class I ground-water; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

The modeled results of the soil gas investigation indicated that vinyl chloride had the potential to accumulate within a proposed building in this area at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA, i.e., Superfund risk assessment, modeled cancer risks under the most protective scenario slightly exceeded the 10^{-6} bench mark used for risk assessment purposes. Results of the limited soil gas survey also indicated that concentrations of methane were not detected within the explosive range in all three locations.

It was noted, however, that "(1) the Johnson-Ettinger model… is inherently conservative and (2) new soil is continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings." Additionally, BB&J suggested that to limit the exposure to these constituents, possible remedies include a subsurface vapor barrier with engineered venting systems installed below the proposed structures. However, BB&J stated that the modeling should

be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

Following the limited soil gas survey, a soil flux survey was conducted within the central portion of the Subject Property to determine whether the COCs identified in BB&J's previous soil gas surveys were present at the surface near the surface of the Subject Property. Using the laboratory analytical data collected from the soil flux samples, BB&J calculated the predicted concentration in the air at approximately five feet above the ground surface for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA risk assessment, modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench-mark used for risk assessment purposes.

In comparison with soil gas concentrations detected as part of the limited soil gas survey and previous limited soil gas surveys completed at the Subject Property, the laboratory data collected and modeled scenarios suggest that the detected constituents present at six feet bgs are significantly dissipated or are absent at the surface of the Subject Property. Possible remedies to limit the exposure of this VOC to the proposed building on the south portion of the Subject Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems.

However, it should be noted that since the time of this report, the proposed future development of the Subject Property will include the installation of an approximately 3-foot thick clean soil cap or an approximately 1-foot clean clay cap in the recreation area. Further, a vapor barrier and passive vent system is currently proposed for the proposed community center.

4.3.8 BB&J Phase II ESA: Community Center

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. BB&J collected 14 soil samples from seven geotechnical soil borings. Three of the geotechnical soil borings were converted into permanent monitoring wells[18]. Additionally, three soil gas samples were collected at approximately five feet bgs and one soil flux sample was collected from the ground surface in this area. Each of the soil samples collected from the geotechnical soil borings and ground-water samples collected from the monitoring wells were submitted for laboratory analysis of the following:

- VOCs by USEPA Method 8260B;
- SVOC by USEPA Method 8270C;
- PCBs by USEPA Method 8082;
- RCRA metals by USEPA Methods 6010B and 7470A/7471A;
- Herbicides by USEPA Method 8151;
- Organochlorine pesticides by USEPA Method 8051A;and,
- pH by USEPA Method 4500H+B.

The analytical results indicated that the following constituents were found to exceed the IEPA TACO Tier 1 soil ROs (sample locations in brackets, depths in parentheses):

Soil Ingestion Exposure Route for Industrial-Commercial Property

- Benzo(a)pyrene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)]; and,
- Arsenic [CCSB-34 (6 – 7.5 feet bgs)].

Soil Inhalation Exposure Route for Construction Worker for Industrial-Commercial Property

- Naphthalene [CCSB-32 (1 – 2.5 feet bgs)], [CCSB-32 (3.5 – 5 feet bgs)], [CCSB-35 (1 –5) feet bgs)], [CCSB-36 (13.5 – 15 feet bgs)]; and,
- Mercury [CCSB-32 (3.5 – 5 feet bgs)].

Soil Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- TCE [CCSB-32 (3.5 – 5 feet bgs)]; and,

[18] It should be noted that additional soil samples were collected during this investigation, however, they were not within the boundary of the current Subject Property.

- Lead [CCSB-32 (3.5 – 5 feet bgs)].

BB&J concluded that with respect to the soil in this portion of the Subject Property, an engineered barrier would be best to eliminate the ingestion and inhalation exposure pathways. Further, due to the Village of Lyons' ordinance (No. 5-18-99-3) restricting the use of ground water as potable water[19] and the Village of Lyons' MOU with the IEPA prohibiting the use of ground-water as a potable water supply, the soil component of the ground-water ingestion exposure route for Class II ground-water is more appropriate; however, even this route can be excluded due to the Village of Lyons ground-water ordinance and MOU with the IEPA.

The analytical results indicated that the following constituents were found to exceed the IEPA Tiered Approach to Corrective Action (TACO) Tier 1 ground-water ROs (sample locations in parentheses):

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I Ground-Water

- Benzo(a)anthracene (CCMW-36);
- Benzo(a)pyrene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36);
- Benzo(b)fluoranthene (CCMW-36); and,
- Vinyl chloride (CCMW-32).

Ground-water Component of the Ground-water Ingestion Exposure Route for Class I and II Ground-Water

- Vinyl chloride (CCMW-32).

With respect to ground water in this area of the Subject Property, BB&J stated that the Village of Lyons has an ordinance (No. 5-18-99-3) restricting the use of ground water as potable water[20]. Furthermore, the Village of Lyons has a MOU with the IEPA which prohibits the use of ground water as a potable water supply. Therefore, BB&J did not recommend any further ground-water investigation at the Subject Property.

BB&J conducted a fourth limited soil gas survey from the three locations from the southeast portion of the Subject Property, two of which were located on the exterior of the proposed footprint of the community center and one located within the proposed footprint. The soil gas samples were collected at a depth of approximately five feet bgs. The soil gas samples were submitted for laboratory analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B. The modeled results of the soil gas investigation indicated that the sample location within the proposed footprint contained

[19] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

concentrations of TCE, while the sample location located outside the proposed footprint contained concentrations of vinyl chloride that had the potential to accumulate within a proposed building in this area at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA, i.e., Superfund risk assessment, modeled cancer risks in this scenario were on the order of approximately one in 1,000,000 chance per employee developing cancer directly attributable to vapor intrusion into the community center due to on-site sources. Results of the limited soil gas survey also indicated that a concentration of methane was detected within the explosive range for one location within the footprint of the proposed community center.

However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

One soil flux sample was also collected from the southeast portion of the Subject Property to determine whether the COCs identified during BB&J's previous soil gas survey were present at or near the surface of the Subject Property. The results indicated that the constituents detected within previous soil gas surveys were significantly dissipated at the surface of the soil.

Using the laboratory analytical data collected from the soil flux samples, BB&J calculated the predicted concentration in the air at approximately five feet above the ground surface for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property Using the laboratory analytical data collected from the soil flux samples, BB&J calculated the predicted concentration in the air at approximately five feet above the ground surface for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property. Using risk assessment parameters typical of an IEPA

[20] http://epadata.epa.state.il.us/land/gwordinance/docs/00012803.pdf

or USEPA-type CERCLA risk assessment, modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench-mark used for risk assessment purposes.

In comparison with soil gas concentrations detected as part of the limited soil gas survey and previous limited soil gas surveys completed at the Subject Property, the laboratory data collected and modeled scenarios suggest that the detected constituents present at six feet bgs are significantly dissipated or are absent at the surface of the Subject Property. Possible remedies to limit the exposure of this VOC to the proposed building on the south portion of the Subject Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. However, it should be noted that since the time of this report, the proposed future development of the Subject Property will include the installation of an approximately 3-foot thick clean soil cap or an approximately 1-foot clean clay cap in the recreation area. Further, a vapor barrier and passive vent system is currently proposed for the proposed community center.

4.4 Commonly Known or Reasonably Attainable Information

No additional commonly known or reasonably attainable information was provided to BB&J by the user of this report (See section 4.3).

4.5 Valuation Reduction for Environmental Issues

Although BB&J was not made aware of a reduction in value of the Subject Property specifically due to any environmental issues by the user of this report, it should be noted that the Subject Property was donated by MSC to the Village of Lyons. The Village of Lyons is the current owner of the Subject Property.

4.6 Owner, Property Manager, and Occupant Information

Mr. Kevin Close, representative for the Village of Lyons, was interviewed by BB&J concerning the current and historical uses of the Subject Property. Mr. Close stated that he had worked for the Village of Lyons for 14 years and during that time he was unaware of historical filling that had occurred on the Subject Property. Mr. Close stated that he was aware of a fueling station that was closed over 15 years ago and which was located on the corner of Ogden and Lawndale Avenues; however, Mr. Close was not entirely sure what had occurred on the Subject Property prior to the Village of Lyons acquiring it from MSC in December 2005.

4.7 Reason for Performing Phase I ESA

It is BB&J's understanding that the Village of Lyons intends to redevelop the Subject Property as mixed-use commercial, municipal, and recreational use. More specifically, the current proposed development at the Subject Property is as follows:

- Commercial development in the north portion of the Subject Property, consisting of commercial retail stores with associated asphalt parking lots, driveways, and landscaped areas. Based on currently available geotechnical information, it is believed that the entirety of this area will be north of the Former Quarry/Former CCDD Fill Operation at the Subject Property;

- Recreational use and green space in the central, central western, and central eastern portions of the Subject Property; and,

- Community center in the southeast portion of the Subject Property, consisting of an approximately 43,000 square foot community center building with associated asphalt parking lots, driveways, and landscaped areas. The existing MSC building located in the southeast portion of the Subject Property is proposed to be demolished due to the development activities of the community center. Similar to the proposed commercial area, it is believed that the entirety of this area will be southeast of the Former Quarry/Former CCDD Fill Operation at the Subject Property.

As such,

- The proposed commercial buildings and asphalt parking lots in the commercial development will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil;
- The proposed recreational use and green space areas will be covered with a compacted clay cap that will act as an engineered barrier to eliminate both the ingestion and inhalation exposure pathways. However, current modeling suggests that no inhalation risk exists in outdoor areas at the Subject Property; and,

- The proposed community center building and asphalt parking lots in the southeast portion of the Subject Property will act as an engineered barrier to reduce migration of VOC vapor from the soil and to prevent direct access to contaminated soil. In addition, a vapor barrier membrane and passive vent system beneath the proposed community center is planned at this time. Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons". Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

Furthermore, the Village of Lyons' Ordinance 5-18-99-3, accepted on May 18, 1999 by the president and board of trustees of the Village of Lyons, states that "the use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Lyons by the installation of drilling of wells or by any other method is hereby prohibited, including withdrawal by the Village of Lyons". Therefore, the exceedances of the ground-water exposure routes at the Subject Property can be excluded.

4.8 Other

Answers to the user questionnaire specified in ASTM E 1527-05 were provided by Mr. Kevin Close. Mr. Close responded to the inquiries, but did not appear to have information indicating possible knowledge of the presence of impacts at the Subject Property. Specifically, BB&J inquired regarding the following:

- Environmental cleanup liens filed or recorded against the Subject Property;
- Activity and land use limitations that are in place or that have been filed or recorded in a registry;
- Specialized knowledge or experience of the person seeking to qualify for the limited liability protection;
- Relationship of the purchase price to the fair market value of the Subject Property if it were not contaminated;
- Commonly known or reasonably ascertainable information about the Subject Property; and,
- The degree of obviousness of the presence or likely presence of contamination at the Subject Property or the ability to detect the contamination by appropriate investigation.

A copy of these responses is provided in Appendix E.

5.0 RECORDS REVIEW

BB&J reviewed the following with respect to the regulatory status of the Subject Property:

- EDR® Report, dated October 26, 2007 (EDR® Report);
- United States Geological Survey (USGS) 7.5 Minute Topographic Maps, Berwyn, Illinois, dated 1998;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Sanborn maps, dated 1930, 1951, and 1975;
- Village of Lyons Building Department Records;
- AE Report, dated December 7, 1993;
- DAI CACR, dated March 10, 1998;
- DAI Attachments to CACR, dated July 29, 1999;
- DAI CACR Amendment, dated February 4, 2004;

- February 2007 Preliminary Soil Gas Investigation, dated February 23, 2007;
- June 2007 Phase II ESA: Commercial Development, dated June 13, 2007;
- June 2007 Phase II ESA: Future Use, dated June 13, 2007;
- June 2007 Phase II ESA: Community Center, dated June 26, 2007;
- Interview with Mr. Kevin Close, representative for the Village of Lyons;
- USEPA Enforcement and Compliance History Online (ECHO) (http://www.epa.gov/echo/); and,
- USEPA's Toxic Release Inventory (TRI) (http://www.epa.gov/enviro/html/tris/tris_query.html).

5.1 Standard Environmental Record Sources

BB&J conducted a review of selected regulatory lists published by State and federal agencies to assess whether the Subject Property or nearby facilities were listed as having past or present records of environmental concern. EDR® provided the regulatory list search, and used the minimum search distances identified in ASTM E 1527-05.

5.1.1 Subject Property

Although not mapped according to the EDR® Report, the Subject Property was identified on the following databases:

- Resource Conservation Recovery Act (RCRA) – Small Quantity Generator (SQG);
- Leaking Underground Storage Tank (LUST);
- UST; and,
- Site Remediation Program (SRP).

The EDR® Report listed the Subject Property, listed as Palumbo Brothers Inc., as a RCRA-SQG with no history of violations. BB&J has filed a FOIA request with the USEPA and IEPA for further information regarding the waste generation. Information reviewed by BB&J from the USEPA confirmed that Palumbo Brothers Inc. was a RCRA-SQG with no violations. The USEPA documentation reviewed did not include any further information about what type of waste was generated other than it was listed as D001, "ignitable waste".

EDR® Report identified the Orange Crush Recycle Co. facility as having a LUST incident (Incident No. 931154) for a diesel release at the historical asphalt plant on the western portion of the Subject Property.

However, according to the EDR® Report, the LUST incident did not receive a NFR letter. BB&J submitted a freedom of information act (FOIA) request to the Illinois OFSM; however, the Illinois OFSM did not have any information regarding the diesel release from the underground pipe.

As noted in Section 4.3.1, the AE Report addressed the work performed in response to a diesel release from an underground pipe connected to a diesel AST at the historic asphalt plant operations, operated by Palumbo Bros. Inc. [(Palumbo), parent company of Orange Crush Recycle, Co.], on the west portion of the Subject Property. MSC owned the property the asphalt plant occupied during the date of the AE Report. The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on-site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the Existing Quarry on the west adjoining property, reported "organic material" visible from a single seep along a roadway leading into the Existing Quarry approximately 50 feet below the surface of the Palumbo asphalt plant. Upon confirmation that the material in the Existing Quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off-site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of BTEX and PAHs on May 21, 1993. According to the AE Report, the concentrations of BTEX and PAHs exceeded IEPA Tier 1 soil ROs.

AE proposed quarterly monitoring of the recovery trench near the seep along the sidewall of the quarry roadway to detect concentrations of diesel fuel. Upon two consecutive quarters where the water quality no longer contained detectable concentrations of diesel fuel, AE stated they would prepare a report documenting the sampling activities and request that the IEPA consider the IEMA Incident closed. However, no further documentation regarding additional quarterly sampling events was provided within the AE Report. Further, the IEMA Incident No. 931154 remains open as of the date of this Phase I ESA.
In addition, the EDR® Report identified the Subject Property, listed as Palumbo Bros Inc., on the UST database. One 10,000-gallon gasoline UST was identified at the Subject Property, and its status was listed as removed. BB&J requested information concerning the LUST from the Illinois OSFM via the FOIA. Based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the historic asphalt plant. The gasoline UST was installed in September 1987

and based upon figures of the area, was located directly west of the historic asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

Additionally, the EDR® Report identified the MSC facility as having multiple UST and LUST incidents. Based upon information obtained from FOIA requests to the Illinois OSFM, MSC was identified as using multiple USTs at their facility, with multiple USTs formerly located on the Subject Property which had reportable releases. Information reviewed by BB&J included Notification for UST forms, Application for Permit to Remove UST forms, Removal Log of UST forms, and subsurface investigative reports. The table below summarizes the UST information reviewed and compiled by BB&J:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported LUST Incident	LUST Incident No.	NFR Letter	On-site / Off-site
1	Diesel	2,000	1981	9/12/1997	NO	NA	NA	Off-site
2	Gasoline	12,000	1978	9/12/1997	YES	971705	YES	Off-site
3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	YES	Off-site
7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
9	Diesel	8,000	5/10/1957	7/31/1997	YES	971392	YES	Off-site
10	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site
11	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site

USTs No. 1 and 2 were located off-site west of the MSC maintenance building. USTs No. 3, 4, 5, 7, and 8 were located in the northeast portion of the Subject Property at the former fueling station. USTs No. 6, 9, 10, and 11 were located off-site south of the Existing Quarry at the intersection of 1st Avenue and 44th Street in Lyons, Illinois.

According to documents received from the Illinois OSFM, during the excavation of USTs No. 3, 4, 5, 7, and 8 in 1995, 330 cubic yards of petroleum-impacted soil and backfill were excavated and disposed off-site. Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from area of the former fueling station and beneath both Ogden and Lawndale Avenues by DAI Environmental Inc. indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. On August 27, 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate those exposure pathways. The NFR letter was released on February 16, 2006 and recorded on title on May 11, 2006.

The Subject Property was also identified in the IEPA SRP (IL EPA ID# 0311715101). The property was enrolled on August 3, 2007 and the remedial applicant (RA) was the Village of Lyons. At the date of this report, no NFR determination had been decided.

It should be noted that the mapped location of the Subject Property in the EDR® Report also identified the Subject Property on the following databases:

- Aerometric Information Retrieval System (AIRS) for Reliable Lyons CCDD;
- Indiana (IN) Spills for 4226 Lawndale Avenue; and,
- Material Licensing Tracking System (MLTS) for MSC.

However, based upon information reviewed within the EDR® Report, it appears that the properties and activities described within the aforementioned databases are not consistent with the current or historical use of the Subject Property. Rather, these activities appear to be located on or associated with adjoining properties. Further information is included in Section 5.1.2.

5.1.2 Vicinity Properties

Multiple regulatory-listed properties were identified by EDR® as being within the ASTM-specified search radii from the Subject Property; however, none of these regulatory-listed sites are likely to impact the Subject Property for one or more of the following reasons:

- Based on the distance of the listed property from the Subject Property, the listed site was judged to be too distant to likely impact the Subject Property;
- The listed site was topographically downgradient or sidegradient to the Subject Property; or,

- The site was listed as engaging in an activity that requires environmental registration, but for which no violation was documented, such as a registered UST with no documented leak, a RCRA SQG or a Large Quantity Generator (LQG) with no history of violations, or a LUST site that has been closed through the State program.

It should be noted, however, that as previously indicated, it appears the EDR® Report incorrectly identified the following activities and databases at the Subject Property:

- AIRS for Reliable Lyons CCDD;
- IN Spills for 4226 Lawndale Avenue;
- MLTS for MSC.

Reliable Lyons CCDD the west adjoining property was listed on the AIRS database. Based on information obtained from the EDR® Report, permitted emissions from this property included particulate matter and volatile organic material from 1972 to 2005 from an aggregate processing plant.

No entity was listed in the Indiana Spills database (facility ID# 200604128); however, the address 4226 Lawndale Avenue was identified as the address. According to the EDR® Report, one gallon of hydraulic oil was spilled. The area affected was identified as a "ship canal" that did not affect the water supply. No date was reported for the spill. According to personnel at the Indiana Department of Environmental Management (IDEM), the county where the spill occurred was listed as unknown. BB&J has filed a FOIA request with IDEM for more information.

MSC, located at 4226 Lawndale Avenue, was listed in the MLTS database. According to the EDR® Report, a license (#12-15293-03) was issued to MSC on May 2, 1983; however, the EDR® Report did not indicate the use of the license. The license expired on May 31, 1988. BB&J has filed a FOIA request with the US Nuclear Regulatory Commission (USNRC) for further information.

Additionally, twenty-six orphan or unmappable sites were listed in the EDR® Report. However, none of these sites were adjacent to the Subject Property. Further details are provided in the EDR® Report as Appendix B.

5.2 Additional Environmental Record Sources

BB&J contacted the following local and regional agencies with regard to environmental issues at the Subject Property:

- USEPA;
- IEPA;
- Village of Lyons Building Department;
- Cook County Health Department;
- OSFM; and,
- Cook County Assessor's Office.

A FOIA request was submitted to the Village of Lyons Building Department. Information reviewed by BB&J included at the Village of Lyons Town Hall included building records, plans, and permits for an asphalt plant. The permits were dated for the summer of 1985 and the drawings showed the asphalt plant located on the western side of the Subject Property. The owner was first listed as Leininger Mid-States Paving and then listed as Palumbo Brothers Inc (8301 Ogden Avenue).

A FOIA request for the 8301 Ogden Avenue address was submitted to the USEPA. The Land and Chemicals Division of the USEPA responded with documentation pertaining to the Subject Property. Information reviewed by BB&J included RCRA Site Details for the Subject Property. The information listed the owner as Palumbo Bros. Inc., and the site as a SQG with no violations. The USEPA documentation reviewed did not include any further information about what type of waste was generated other than it was listed as D001, "ignitable waste". Based upon the historical activities at the historical asphalt plant, it is believed that this waste code corresponds to the contents of the AST for waste disposal purposes.

A FOIA request was submitted to the IEPA for 8301 Ogden Avenue. The request for information was routed to the Bureau of Land, Bureau of Water, Division of Air Pollution Control, Division of Legal Council, and the Office of Emergency Response. BB&J received a response of "no records located" from the Bureau of Water, Division of Air Pollution Control, Division of Legal Council and the Office of Emergency Response. BB&J reviewed an Illinois Emergency Management Agency form from the Bureau of Land for a 100-gallon diesel LUST incident that occurred on May 5, 1993 at the historical asphalt plant due to the underground pipe release. A NFR letter was not in the documents reviewed.

A FOIA request for the 8301 Ogden Avenue address was submitted to the Illinois OSFM. One 10,000-gallon gasoline UST was identified at the Subject Property, and its status was listed as removed. BB&J requested information concerning the LUST from the Illinois OSFM via the FOIA. Based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at

the historic asphalt plant. The gasoline UST was installed in September 1987 and based upon figures of the area, was located directly west of the historic asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

Since the Subject Property was previously owned and operated by MSC, a FOIA request for 4226 South Lawndale Avenue (south adjoining property) and 4220 Riverside Drive (southwest vicinity property) was submitted to the Illinois OSFM. The OSFM stated that the two addresses had been merged and the owner was listed as MSC. According to the documentation reviewed, MSC purchased 4226 South Lawndale Avenue in April 1939 and 4220 Riverside in May 1957. Information obtained is described in Section 5.1.1 above.

A FOIA request was submitted to the IEPA for 4226 South Lawndale Avenue. The request for information was routed to the Bureau of Land, Bureau of Water, Division of Air Pollution Control, Division of Legal Council, and the Office of Emergency Response. BB&J received a response of "no records located" from the Division of Legal Council and the Office of Emergency Response. BB&J reviewed documentation from the Bureau of Land, the Bureau of Water and the Division of Air Pollution Control.

Furthermore, BB&J submitted FOIA requests for every known address that may have occupied parts of the Subject Property. FOIA requests were submitted to the various departments within the USEPA and IEPA, as well as the Cook County Health Department, and the Illinois OSFM. At the time of this report, the applicable information had not been received. Upon receipt of this information, BB&J will review it. If the contents of the information should change the conclusions of this report, the Village of Lyons will be notified under separate cover.

5.3 Physical Setting Sources

BB&J reviewed the EDR® Report, dated October 26, 2007, and the USGS 7.5 Minute Topographic Map, Berwyn, Illinois, dated 1998 (Topographic Map), with respect to the physical setting of the Subject Property:

According to the EDR® Report, dated October 26, 2007, the Subject Property is located in an area comprised of the soil type known as Urban land. Additionally, BB&J reviewed the *Soil Survey of Du Page and Part of Cook Counties, Illinois*, prepared by the United States Department of Agriculture, Soil Conservation Service, issued March 1979, for details regarding the soils at the Subject Property. The review indicated that soils at the Subject Property and the vicinity area were classified as Urban land – Markham – Ashkum, which were described as built-up areas and deep, gently rolling to nearly level, moderately well drained and poorly drained soils that have a clayey and silty subsoil. These soils were formed in glacial till and located on uplands and lake plains. Urban Land is used to describe soils that cannot be identified due to extensive modification. The description of Urban land – Markham – Ashkum soils are generally consistent with soil encountered during the DAI and BB&J subsurface investigations in areas of the Subject Property that were not quarried and subsequently filled in.

Based on the data collected during DAI's site investigations at the former fueling station in the northeast portion of the Subject Property, the on-site subsurface materials generally consisted of sandy clay or silty clay fill from approximately 0 to three feet bgs, followed by a layer of sandy clay from approximately three to 10 feet bgs and/or sandy clay. The deepest soil boring was advanced to a maximum depth of approximately 10 feet bgs.

Based previous investigations by BB&J, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within five to 55 feet bgs. Auger refusal, believed to be the top of limestone bedrock, was encountered at depths of 5 to 6 feet bgs on the northwest portion of the Subject Property, at a maximum depth of 60 feet bgs in the north-central portion of the Subject Property, between 20 or 40 feet bgs on the eastern portion of the Subject Property, and 15 to 22 feet bgs on the southern portion of the Subject Property. The variability in bedrock depth is believed to be attributable to historic quarrying activities and due to the natural formation of the weathered, limestone bedrock beneath the overlying soil.

According to the USGS Urbana, Illinois Quadrangle 7.5-minute series topographic map dated 1975 and site-specific surveys, the Subject Property is located at an approximate elevation of 620 feet above the National Geodetic Vertical Datum of 1929, with a steep slope on the west portion of the Subject Property to an elevation of approximately 570 feet.

Based on information from the EDR® Report and the Topographic Map, the estimated direction of ground-water flow is to the west toward the Existing Quarry. The nearest surface body of water, the Des Plaines River, is located approximately 1/4-mile north of the Subject Property. The EDR® Report listed the approximate depth to the ground-water table as greater than six feet bgs. The Des Plaines River and the Chicago Sanitary and Ship Canal are located approximately one mile southeast of the Subject Property. The June 2007 Phase II ESA: Commercial Development encountered ground-water at approximately 5 to 19 feet bgs at locations within the northeast areas of the Subject Property, while the June 2007 Phase II ESA: Strategy and Sampling – Community Center encountered ground-water at approximately 11 to 13 feet bgs. Based on the June 2007 Phase II ESA: Commercial Development, dated June 13, 2007, ground-water flow appeared to be towards the southeast towards the Des Plaines River and the Chicago Sanitary and Ship Canal. In addition, based on the June 2007 Phase II ESA: Strategy and Sampling – Community Center, the ground-water flow appeared be radial from the south-central portion of the Subject Property to the north, west, and east. However, DAI conducted a hydrogeological investigation at the former fueling station on the northeast portion of the Subject Property as identified in the DAI CACR Amendment. Ground water was observed at depths that ranged approximately from five to 10 feet bgs in three permanent monitoring wells in this area. Ground water was encountered at a depth just above the limestone bedrock in each of the three permanent monitoring wells where water was observed. Based upon measured ground-water elevations, DAI estimated the ground-water flow direction in this area to be west-southwest at a hydraulic gradient of 0.022 feet / feet.

BB&J also referred to the EDR® Report to identify wells located within a one-mile radius of the Subject Property. Review of the Federal USGS Well Information database lists four water wells within a one-mile radius; review of the Federal FRDS Public Water Supply System Information database lists one water well within a one-mile radius; and review of the State Database Well Information lists sixty-nine wells within a one-mile radius of the Subject Property. Although seventy-four wells are located within a one-mile radius of the Subject Property, none are located on the Subject Property.

5.4 Historical Use Information on the Subject Property

BB&J reviewed the following with respect to the historical use of the Subject Property:

- USGS 7.5 Minute Topographic Map, Berwyn, Illinois, dated 1998;
- Historical topographic maps, dated 1901, 1953, 1963, 1972, 1980, and 1993;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Sanborn maps, dated 1930, 1951, and 1975;

- City Directories
- City Directories; and,
- Village of Lyons Building Department Records.

Based on historical records research, the Subject Property consisted of undeveloped property in 1901. Since the 1930s, the Subject Property has consisted of three main areas: a Former Quarry located in the central and western portions of the Subject Property, several structures located in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues, and several MSC buildings and associated parking lots located in the southeast portion of the Subject Property. More specifically:

Former Quarry / Former CCDD Fill Operation Area

From at least 1939 to 1953, the central and western portions of the Subject Property consisted of a limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. The land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff gray and brown clay and clay fill. Pockets of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet below ground surface (bgs). Additionally, occasional pockets of ash, asphalt, wood and brick debris were encountered within 5 to 55 feet bgs.

From the early 1980s to 1995 an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the

Former Quarry. In 1993, a leak in an underground pipe that connected to a diesel aboveground storage tank (AST) at the Palumbo facility was detected and was designated as Illinois Emergency Management Agency (IEMA) Incident Number 931154. Approximately 100 gallons of diesel fuel were released into the subsurface. An investigation indicated that the diesel fuel migrated to the Existing Quarry wall at the western adjoining property. Approximately 50 cubic yards of petroleum-impacted soil was removed from the asphalt plant at the Subject Property; however, a No Further Remediation (NFR) letter was never issued for the release. According to the Alpha Environmental Report, concentrations of benzene and several polynulcear aromatic hydrocarbons (PAHs) in soil samples collected from the excavation exceeded IEPA Tiered Approach to Corrective Action Objectives (TACO) Tier 1 soil remediation objectives (ROs) for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway. The former asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as parts of the central portion of the Subject Property, was used as a staging area for CCDD for filling the Existing Quarry by Reliable Lyons, LLC (Reliable). In addition, based upon records reviewed from the Illinois Office of the State Fire Marshall (OSFM), one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the former asphalt plant. The gasoline UST was installed in September 1987 and based upon historic maps of the area, was located directly west of the asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, “no apparent contamination [was] observed”, as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

In addition, there was a pond (Former Pond) located along the former eastern edge of the quarry near the north-central portion of the Subject Property from approximately 1980 to 2006. The pond was filled since 2006, and presently is a level, vacant area.

Northeast Area of Subject Property

There have been several structures on approximately 0.37-acre tract at the northeast of the Subject Property, at the corner of Ogden and Lawndale Avenues. In 1939, this tract was occupied by an apparent residential building. From 1951 to 1980, an apparent fuel station was located at this area. From 1988 to the present, this tract has been vacant. According to information obtained from the

Illinois Office of the State Fire Marshal (OSFM), five gasoline USTs, operated by MSC, were installed for the fuel station in 1957 and removed in 1995. During the removal of the USTs, a release of gasoline was documented (IEMA Incident Number 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fuel station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fuel station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a No Further Remediation (NFR) letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

MSC Buildings in Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. Currently, the north MSC warehouse building is no longer present. Additionally, a portion of the other MSC building located on the Subject Property and along Lawndale Avenue has been razed for redevelopment activities associated with the proposed community center.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD Fill Operation on the western adjoining property was acquired by Reliable.

5.4.1 Aerial Photographs

Aerial photographs provided by the EDR® Aerial Photo Decade Package were reviewed for the years 1951, 1962, 1988 and 1993. In addition, an aerial photograph from 1939 was reviewed on the Illinois

Natural Resources Geospatial Data Clearinghouse website (www.isgs.uiuc.edu/nsdihome), and aerial photographs for the years 1998 and 2002 were reviewed on the TerraServerUSA website (www.terraserver-usa.com).

Quarry Area

From at least 1939 to 1951, the central and western portions of the Subject Property consisted of the limestone Former Quarry which extended into the Existing Quarry on the west adjoining property. The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, does not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property[21]. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. From at least 1988 to 1993, the filled in quarry area appeared as level ground with the historic asphalt operation located on the west portion of the Subject Property, while the Former Pond was located in the north-northeast portion of the Subject Property at the location of the eastern edge of the quarry. Vegetated land appears to separate the historic asphalt plant and the Former Pond. By 1998, the historic asphalt plant is no longer present, while the Former Pond appears the same as the 1988 and 1993 aerial photographs. By 1998 and 2002, small piles that appear to be soil and concrete are scattered across the western and central portions of the Subject Property. Vegetated land surrounds the Former Pond located on the north-northeast portion of the Subject Property.

Northeast Area of Subject Property

Several small structures were present in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues in 1939. From 1951 to 1962, one structure was located at this area and resembles a fueling station and matches the location of the former fueling station as observed in other historical documents. From 1988 to 2004, no structures are present in this area of the Subject Property and the area appeared to be paved.

[21] BB&J has attempted to contact MSC regarding the nature of the materials used to fill the quarry; however, BB&J has not received a response.

Southeast Area of Subject Property

Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1939. From 1951 to 1988, the current MSC building and an additional rectangular MSC warehouse building located north of the current MSC building were located long Lawndale Avenue. From at least 1993 to 2002, the two MSC buildings remained with an asphalt parking lot located between the two MSC buildings.

5.4.2 Topographic Maps

Topographic maps provided by the EDR® Historical Topographic Map Report were reviewed for the years 1901, 1953, 1963, 1972, 1980, 1993, and 1998. In 1901, the Subject Property appeared at an elevation of 620 feet with no discernable structures present or indications of the Former Quarry. In 1953 the north, west, and central portions of the Subject Property appeared as a portion the Existing Quarry which extended to the west to Plainfield Road and 1st Avenue, with a surface elevation of 615 feet above the National Geodetic Vertical Datum of 1929. The railroad tracks originated from the southwest adjoining property and surrounded the quarry at the Subject Property to the north, east, and south. Several structures in the location of the current MSC building were present near the railroad track in the south portion of the Subject Property. Contour intervals from the bottom of the Former Quarry at the Subject Property and the Existing Quarry on the west adjoining property were not depicted. From at least 1963 to 1980, the Former Quarry at the Subject Property was been filled in to an elevation of approximately 615 feet above the National Geodetic Vertical Datum of 1929, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks were no longer shown on the Subject Property, and three buildings, one on the northeast corner (presumably the fueling station) and two on the southeast corner (the MSC buildings), appeared on the maps. On the 1993 topographic map, the Former Pond is present on the north-northeast portion of the Subject Property. The former fueling station structure located in the northeast portion of the Subject Property is no longer present. However, three buildings appeared on the map: one in the west portion of the Subject Property (presumably the historic asphalt plant) and two in the southeast portion of the Subject Property (the MSC buildings). The 1998 topographic map is the same as the 1993 topographic map with the exception of the historical asphalt plant is no longer present.

5.4.3 Sanborn Maps

Sanborn maps provided by the EDR® were reviewed for the years 1930, 1951, and 1975. Only the far southeast portion of the Subject Property was depicted in each of the three years of coverage. According to EDR®, the symbol "0" on the edges of the Sanborn maps denotes that coverage of those areas does not exist. As such, the southeast portion of the Subject Property in 1930 consisted of two structures, one labeled as "mortor plant", and two railroad spurs which emanated from the southwest corner of the map. A small portion of the Former Quarry is located on the 1930 Sanborn map which indicated that the quarry was 30 feet deep. By 1950, the "mortor plant" was replaced by the rectangular MSC warehouse depicted in aerial photographs along Lawndale Avenue. The other structure depicted in 1930 remained, as well as the railroad spurs; however, the quarry's depth was not indicated. Rather, 1951 Sanborn map simply stated that "quarry [is] beyond." By 1975, the MSC warehouse remained, but the other structure located along Lawndale Avenue was depicted in a different configuration. The configuration is similar to the MSC office building observed to date. Additionally, one railroad spur was no longer present (one still remained), and a small square structure was depicted just west of the MSC office building. The 1975 Sanborn map also shows north of the MSC buildings that "quarry [is] beyond."

5.4.4 City Directories

The Subject Property was not listed in any of the City Directories provided by EDR®.

5.5 Historical Use Information on the Adjoining Properties

BB&J reviewed the following with respect to the historical use of the adjoining properties:

- USGS 7.5 Minute Topographic Map, Berwyn, Illinois, dated 1998;
- Historical topographic maps, dated 1901, 1953, 1963, 1972, 1980, and 1993;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Sanborn maps, dated 1930, 1951, and 1975; and,
- Village of Lyons Building Department Records.

Aerial photographs provided by the EDR® Aerial Photo Decade Package were reviewed for the adjoining properties for the years 1951, 1962, 1988 and 1993. In addition, an aerial photograph from 1939 was reviewed on the Illinois Natural Resources Geospatial Data Clearinghouse website (www.isgs.uiuc.edu/nsdihome), and aerial photographs for the years 1998 and 2002 were reviewed on the TerraServerUSA website (www.terraserver-usa.com). The adjoining property to the north appeared as

Ogden Avenue and beyond that as the Des Plaines River from at least 1901 to 1953. From at least 1963 to the present the adjoining property to the north appeared as Ogden Avenue and beyond that as Plank Road Meadow park, the Des Plaines River and a structure that formerly occupied by an auto service station located northeast of the Subject Property which at the time of the site reconnaissance was vacant. The adjoining property to the south appeared undeveloped property in 1901. Several of the structures currently occupied by MSC were present by 1939. From 1939 to the present, the south adjoining property appeared as two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot. The adjoining property to the east appeared as Lawndale Avenue and beyond that as a mix of residential and commercial property from 1901 to 1972. The adjoining property to the east appeared as Lawndale Avenue and beyond that as commercial and residential property and Smith Park from at least 1988 to 2002. The adjoining property to the west appeared as undeveloped property in 1901, and as the Existing Quarry and beyond that as undeveloped property in 1939. From at least 1953 to 2002, the adjoining property to the west appeared as the circular Existing Quarry.

Topographic maps provided by the EDR® Historical Topographic Map Report were for the adjoining properties for the years 1901, 1953, 1963, 1972, 1980, 1993, and 1998. The adjoining property to the north appeared as Ogden Avenue beyond that as the Des Plaines River from at least 1901 to 1953 and as Ogden Avenue and beyond that as Plank Road Meadow park and the Des Plaines River from at least 1963 to 1998. The Subject Property was adjoined to the south by undeveloped property in 1901, and by two buildings, currently operated by Material Services Corporation from at least 1953 to 1998. The adjoining property to the east appeared as Lawndale Avenue and beyond that as residential and commercial property from at least 1901 to 1980, and as Lawndale Avenue and beyond that as Smith Park, residential and commercial property from at least 1993 to 1998. The adjoining property to the west appeared as undeveloped property in 1901, and appeared as the Existing Quarry from at least 1953 to 1998.

Sanborn maps provided by the EDR® for the adjoining properties were reviewed for the years 1930, 1951, 1975. More specifically, coverage of the Sanborn maps included only the south and east and southeast adjoining properties. In 1930, the adjoining property to the south consisted of a vacant lot and a road labeled “Kensington Road or 43rd Street”, while the east-southeast adjoining property consisted of vacant land, a “Lumber & Building Material Yard”, and several small structures labeled as “Mayer and Wagner Green Houses”. By 1951, the south and east-southeast adjoining properties appeared similar to the 1930 Sanborn map with the exception that the existing MSC maintenance building located just south of the Subject Property was present. By 1975, the south adjoining property appeared as the MSC maintenance and office buildings currently present, while the east-southeast adjoining properties appeared as commercial and vacant properties.

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

Ms. Hargreaves of BB&J conducted the site reconnaissance on August 1, 2007. At the time of BB&J's site reconnaissance, temperatures at the Subject Property were observed to be approximately 85 degrees Fahrenheit. During the site reconnaissance, the entire Subject Property was accessible.

6.2 General Site Setting

The Village of Lyons is the current owner of the Lyons Quarry Reclamation District TIF #4, which is an approximately 17-acre property located at 4152 Lawndale Avenue in Lyons, Cook County, Illinois (Subject Property). The majority of the Subject Property, in particular the central and western portions of the Subject Property, consists of a former CCDD fill operation (Former CCDD Fill Operation) located within the Former Quarry at the Subject Property. The far western portion of the Subject Property is graded down toward the Existing Quarry on the western adjoining property. Additionally, the southeast portion Subject Property consists of an office building along Lawndale Avenue that is currently operated by MSC, former operator of the CCDD fill operation and owner of the Subject Property, and an associated asphalt parking lot. The northeast portion of the Subject Property consists of two asphalt barriers in the area of a former fueling station at the corner of Ogden and Lawndale Avenues. Reliable, operator of the Existing Quarry on the western adjoining property, currently utilizes the central portion of the Subject Property as a staging area of CCDD for the Reliable Lyons CCDD.

6.3 Exterior Observations

BB&J observed the following items on the exterior of the Subject Property:

6.3.1 Debris Mounds

BB&J observed three large mounds of debris located in the central south side of the Subject Property. The mounds included concrete, asphalt, and bricks. While onsite, BB&J observed the additional dumping of brick onto the brick mound. The three mounds varied in size: the brick mound was the smallest with an approximately 30-foot diameter, the asphalt mound had an approximately 40-foot diameter and the concrete mound had an approximately 60-foot diameter.

6.3.2 Transformers

BB&J observed three pole-mounted transformers located approximately 100 feet south (topographically sidegradient) of the southern property line. It was unclear if the transformers contained polychlorinated biphenyls (PCBs), and the transformers appeared in poor condition. Specifically, the transformers appeared rusted, and there was staining on the wood directly beneath and supporting the transformers.

6.3.3 Asphalt Engineered Barriers

BB&J observed a concrete pad located in the northeast corner of the Subject Property. The concrete appeared to be in fair condition, with minimal vegetation growing over the area. The asphalt barriers observed by BB&J were the engineered barriers discussed Section 4.3.4.

6.3.4 Concrete Pit

BB&J observed a concrete pit located on the north central portion of the Subject Property approximately 20 feet south of Ogden Avenue. The concrete pit was approximately four feet deep bgs, seven feet long, and four feet wide. A pipe leading out of the concrete pit toward Ogden Avenue generally in the direction of a storm water manhole cover was visible within the top north middle portion of the pit. Although the use of the concrete pit have not been made definitively, based on (1) its location relative to historic site access and (2) BB&J's general observations, it appears that it may have been formerly used as a weighing scale for trucks entering this part of the Subject Property. Because the pipe situated on the north wall of the concrete pit is (1) located relatively near the storm water manhole cover along Ogden Avenue and (2) oriented generally in that direction, it appears that it was drain rain water from the structure. The edges of the concrete pit appeared to be eroding and crumbling. The concrete pit contained approximately 3 feet of rainwater.

6.3.5 Monitoring Wells

BB&J observed four above ground-water monitoring wells located within the northern section of the Subject Property. The monitoring wells were installed as part of BB&J's June 2007 Phase II ESA: Strategy and Sampling – Commercial Development. The metal well covers were spray-painted orange and had four-foot by four-foot concrete blocks located near them to prevent damage during site operations. BB&J observed the interior of the metal well covers and found the wells to be in good

condition. The locks that had been placed on the caps to the wells were still in place and tampering of the locks or wells was not apparent.

BB&J observed three flush-mount ground-water monitoring wells located within the southern section of the Subject Property. The monitoring wells were installed as part of BB&J's June 2007 Phase II ESA: Strategy and Sampling – Community Center. BB&J observed the interior of the metal well covers and found the wells to be in good condition. Tampering of the locks or wells was not apparent.

6.3.6 Berm

BB&J observed a berm on the eastern portion of the Subject Property located along Lawndale Avenue. The berm was approximately 10-feet high and was situated along Lawndale Avenue between the south side of the concrete pad in the north and the north side of the MSC parking lot in the south. The berm was present during the BB&J's Preliminary Soil Gas Investigation, but had been removed during the time of BB&J's June 2007 investigations. The berm was freshly seeded with grass seed at the time of BB&J's site reconnaissance.

6.4 Interior Observations

BB&J observed the following items on the interior of the Subject Property:

6.4.1 MSC Cleaning Supply Room

BB&J observed a cleaning supply room located in a closet in the western portion of the office building. The room appeared to contain at least three 1-gallon bottles of bleach, one aerosol window cleaner, one bottle of floor clean, a mop and associated bucket, a sink, two brooms, and various amounts of paper towels. All of the cleaning supplies observed were located on shelving units and appeared to be in good condition.

6.4.2 MSC Floor Drains

BB&J observed two floor drains located in the basement of the MSC Office Building. More specifically:

- One floor drain was located on the western portion of the basement at the base of the stairway. The drain had a cover which was slightly rusted. The surrounding concrete appeared to be in good condition with no signs of cracks or staining; and,

- The second floor drain was located in the center of a room located in the northwest corner of the basement. The floor drain was uncovered and full of debris. The drain appeared to be rusted, and there surrounding concrete appeared rusted. BB&J observed no cracks or additional stress in the vicinity of the floor drain.

BB&J interviewed Mr. Greg Wilcox, P.E. for Reliable, in regards to where the floor drains were routed. Mr. Wilcox stated that the drains discharged to the sanitary sewer along Lawndale Avenue.

6.4.3 MSC Sump

BB&J observed a sump located in the southwest corner of the northwest room of the basement. The sump was still operating. The sump was covered, and the surrounding concrete appeared to be rusted. Mr. Wilcox stated that the sump discharged to the sanitary sewer along Lawndale Avenue.

7.0 INTERVIEWS

Details concerning interviews conducted as part of this Phase I ESA are summarized below.

7.1 Interview with Owner

Pursuant to requirements specified in ASTM E 1527-05, answers to a user questionnaire were provided by the Village of Lyons, Subject Property owner. Details concerning answers to the questionnaire are summarized below and a copy of these responses are provided in Appendix E.

7.2 Interview with Site Manager

See Section 4.6.

7.3 Interview with Occupants

BB&J interview Mr. Wilcox in regards to the MSC Office Building. Mr. Wilcox stated that, to the best of his knowledge, the Subject Property has been an office building since at least the 1950s. In addition, Mr. Wilcox stated that there are no and has been no ASTs/USTs or hazardous materials stored on the Subject

Property. Furthermore, BB&J inquired about a former building located just north of the MSC Office Building. According to Mr. Wilcox, the other former MSC building was used as a storage shed/warehouse.

7.4 Interview with Local Government Officials

BB&J contacted the IEPA, Bureau of Land to determine if the Subject Property had a permit for the Former CCDD Fill Operation. BB&J spoke with Mr. Tom Hubbard of the IEPA Bureau of Land regarding the permit. Mr. Hubbard stated that Reliable Lyons has Interim Authorization, and that currently permits are not required. However, Ms. Anna VanOrden, Environmental Protection Specialist, also with the IEPA Bureau of Land, stated that the Interim Authorization was for the filling of the Existing Quarry adjacent to the Subject Property to the west and not for the Subject Property; therefore, Ms. VanOrden stated that the three mounds of concrete, asphalt and brick should not have been placed on the Subject Property.

Ms. VanOrden accompanied Ms. Hargreaves on the August 1, 2007 site walk. Ms. VanOrden stated that she had received complaints about the site regarding dumping and pipes sticking out of the ground. BB&J confirmed during the walkover that the "pipes" were actually monitoring wells installed during BB&J's June 2007 Phase II ESA: Commercial Development and the dumping reported was in regards to the three debris piles mounds on the southern central side of the Subject Property.

7.5 Interview with Others

No other interviews were conducted as part of this Phase I ESA Report. Occupants of the adjoining properties were unavailable to discuss the current and historical uses of the Subject Property.

8.0 FINDINGS

BB&J performed its Phase I ESA in conformance with the scope and limitations of ASTM Practice E-1527-05 at the Subject Property located at the southwest corner of Ogden and Lawndale Avenue in Lyons, Cook County, Illinois. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. Data gaps and findings identified during this Phase I ESA are summarized in the following subsections.

8.1 Data Gaps

In preparation of this 2007 Phase I ESA, the following data gaps were identified:

First Developed Use – BB&J was unable to account for historical use of the Subject Property within five year intervals dating back to 1940, as outlined within the ASTM E Practice. Based on historical records research, the Subject Property was undeveloped property in 1901. Since 1901 to the present, the Subject Property has consisted of a Former Quarry, a Former CCDD Fill Operation, a Former Pond, a former fueling station, a former asphalt plant, and office buildings. Documentation reviewed on the Cook County Recorder of Deeds website contained information pertaining to the donation of the Subject Property from MSC to the Village of Lyons. As BB&J was unable to locate documentation regarding ownership of the Former Quarry at the Subject Property, BB&J anticipates that this data gap could materially affect our findings.

Historical Property Operations – BB&J was unable to obtain specific information regarding the Subject Property's historical operations. Based on historical records research, from at least 1939 to 1953, the Subject Property appeared to have operated as a Former Quarry; however, BB&J was unable to locate documentation indicating who owned and operated the Former Quarry during that time. In 1962, the Former Quarry was filled in[22], with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. Other than being identified as a Former CCDD Fill Operation, BB&J could not find more detailed information indicating the nature of the materials that were used to fill the Former Quarry. Since BB&J was unable to locate documentation regarding historical operations at the Subject Property, including ownership of the Former Quarry and the source/nature of fill material at the Former quarry, BB&J anticipates that this data gap could materially affect our findings.

8.2 Findings

Subject to the data gaps identified above, and based on BB&J's site reconnaissance and review of historical records, this assessment has revealed the following RECs in connection with the Subject Property:

[22] BB&J has attempted to contact MSC regarding the nature of the materials used to fill the quarry; however, BB&J has not received a response.

Subject to the data gaps identified above, and based on BB&J's site reconnaissance and review of historical records, this assessment has revealed the following RECs[23] in connection with the Subject Property:

Historical Asphalt Plant Leaking Underground Pipe Incident – BB&J reviewed documentation that an underground pipe that connected a diesel AST to a historical asphalt plant leaked approximately 100 gallons of diesel fuel into the subsurface. BB&J obtained information from the Village of Lyons Building Department which indicated that the asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then by Palumbo Bros., Inc[24]. began operations on the west portion of the Subject Property in the early 1980s. Building records indicate that operations at the historical asphalt plant ceased in 1995. BB&J obtained a copy of the AE Repor) which addressed the work performed in response to the diesel release (IESDA Incident No. 931154). The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel missing from the on-site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the quarry on the west adjoining property, reported "organic material" visible from a single seep along a roadway leading into the west adjoining quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the "organic material" along the roadway. Based on the assumption that the diesel loss and the visible "organic material" were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident No. 931154).

A site reconnaissance of the historic asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2-inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of five to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off-site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a

[23] The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground-water, or surface water of the property, ASTM E 1527-05.
[24] Palumbo Bros. Inc. is the parent company of Orange Crush Recycle Co.

laboratory for analysis of TPH for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel.

Upon confirmation that the material in the quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off-site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of BTEX and PAHs on May 21, 1993. According to the AE Report, concentrations of benzene and several PAHs in soil samples collected from the excavation exceeded IEPA TACO Tier 1 soil ROs for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway[25]. The historic asphalt plant closed in 1995.

The EDR® Report further identified the aforementioned release as a LUST incident (Incident No. 931154) for a diesel release at the Orange Crush Recycle Co. facility, reported in May 1993. However, according to the EDR® Report, the LUST incident did not receive a NFR letter. BB&J submitted a FOIA request to the Illinois OFSM; however, the Illinois OFSM did not have any information regarding the diesel release from the underground pipe. Due to the (1) absence of documentation of regarding quarterly monitoring and sampling of the ground-water as recommended in the Palumbo Report and (2) Subject Property not having received a NFR to close the LUST incident, BB&J regards the Historical Asphalt Plant Leaking Underground Pipe Incident as an REC.

<u>Historical Former Quarry Filling</u> – Based on historical records research, from at least 1939 to 1953, the central and western portions of the Subject Property consisted of the limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated

[25] It should be noted that one benzene concentration exceeded the Class I soil component of the ground-water ingestion exposure route; however, due to Village of Lyons Ordinance No. 5-18-99-3 which prohibits the use of potable wells, this exceedance was not considered by BB&J. Additionally, a concentration of benzo(a)pyrene exceeded the commercial-industrial ingestion

from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property[26]. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation[27], BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within five to 55 feet bgs. Analytical results from the soil samples collected during BB&J's previous investigations in the Former Quarry indicated that several VOCs, SVOCs and RCRA metals were found to exceed the IEPA TACO soil ROs.

In addition, one Historical[28] REC was identified associated with the Subject Property as follows:

Former On-site MSC USTs – Based upon information obtained from FOIA requests to the Illinois OSFM, MSC was identified as using multiple USTs at their facility, with multiple USTs formerly located on the Subject Property which had reportable releases. Information reviewed by BB&J included Notification for UST forms, Application for Permit to Remove UST forms,

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exposure route, but did not exceed the Metropolitan background standards for Metropolitan Areas as indicated in Title 35 IAC 742, Appendix A, Table H.

[26] BB&J has attempted to contacted MSC regarding the specific nature of the materials used to fill the quarry; however, BB&J has not received a response.

[27] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.

[28] Under the ASTM Practice, a "*historical recognized environmental condition*" is defined as "an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. The final decision rests with the *environmental professional* and will be influenced by the current impact of the *historical recognized environmental condition* on the *property*. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the *property* and has been remediated, with the such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the *Phase I Environmental Site Assessment* report. The environmental professional shall provide an opinion of the current impact on the property of this *historical recognized environmental condition* in the opinion section of the *report*. If the historical recognized environmental condition is determined to be a recognized environmental condition at the time of the *Phase I Environmental Site Assessment* is conducted, the condition shall be identified as such and listed in the conclusions section of the *report*."

Removal Log of UST forms, and subsurface investigative reports. The table below summarizes the UST information reviewed and compiled by BB&J:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported LUST Incident	LUST Incident No.	NFR Letter	On-site / Off-site
1	Diesel	2,000	1981	9/12/1997	NO	NA	NA	Off-site
2	Gasoline	12,000	1978	9/12/1997	YES	971705	YES	Off-site
3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	YES	Off-site
7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
9	Diesel	8,000	5/10/1957	7/31/1997	YES	971392	YES	Off-site
10	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site
11	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site

USTs No. 1 and 2 were located off-site west of the MSC maintenance building. USTs No. 3, 4, 5, 7, and 8 were located in the northeast portion of the Subject Property at the former fueling station. USTs No. 6, 9, 10, and 11 were located off-site near the southeast corner of the current quarry at the intersection of 1st Avenue and 44th Street in Lyons, Illinois.

According to documents received from the Illinois OSFM, during the excavation of USTs No. 3, 4, 5, 7, and 8 in 1995, 330 cubic yards of petroleum-impacted soil and backfill were excavated and disposed off-site. Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from area of the former fueling station and beneath both Ogden and Lawndale Avenues by DAI Environmental Inc. indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. On August 27, 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate those exposure pathways. The NFR letter was released on February 16, 2006 and recorded on title on May 11, 2006.

In addition, the following *de minimis*[29] environmental conditions were observed:

[29] Conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. ASTM E 1527-05.

Concrete Pit – BB&J observed a concrete pit located on the north central portion of the Subject Property approximately 20 feet south of Ogden Avenue. The concrete pit was approximately four feet deep bgs, seven feet long, and four feet wide. A pipe leading out of the concrete pit toward Ogden Avenue generally in the direction of a storm water manhole cover was visible within the top north middle portion of the pit. Although the use of the concrete pit has not been made definitively, based on (1) its location relative to historic site access and (2) BB&J's general observations, it appears that it may have been formerly used as a weighing scale for trucks entering this part of the Subject Property. Because the pipe situated on the north wall of the concrete pit is (1) located relatively near the storm water manhole cover along Ogden Avenue and (2) oriented generally in that direction, it appears that it was used to drain rain water from the structure. The edges of the concrete pit appeared to be eroding and crumbling. The concrete pit contained approximately 3 feet of rainwater.

Current Operations at the Subject Property – At the time of the site reconnaissance, the Subject Property consisted of a Former CCDD Fill Operation[30]. Reliable used the central portion of the Subject Property as a staging area that included a large pile of concrete, a pile of asphalt and a pile of bricks. BB&J contacted the IEPA Bureau of Land to determine if the Subject Property had a permit for the fill operation. Mr. Hubbard of the IEPA Bureau of Land stated that MSC has Interim Authorization[31] and that currently permits are not required. Ms. VanOrden, with the IEPA Bureau of Land, accompanied Ms. Hargreaves on a site reconnaissance of the Subject Property on August 1, 2007. Ms. VanOrden stated that the Interim Authorization was for the filling of the adjacent quarry, operated by Reliable, located west of the Subject Property and not specifically for the Subject Property. BB&J obtained a list of CCDD fill operations that had interim authorization. The list included Reliable Lyons CCDD (site number 0311715020), located at 4226 S. Lawndale Avenue in Lyons, Cook County, Illinois.

Former On-site Historic Asphalt Plant UST – Based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the historic asphalt plant. The gasoline UST was installed in September 1987 and based upon figures of the area, was located directly west of the historic asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt

[30] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.

plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-gallon gasoline UST dated January 26, 1995.

Off-site Pole-mounted Transformers – BB&J observed three pole-mounted transformers located approximately 100 feet south (sidegradient) of the southern property line. It was unclear if the transformers contained polychlorinated biphenyls (PCBs). The transformers appeared in poor condition; they were rusted, and there was staining on the wood poles supporting the transformers.

9.0 CONCLUSIONS

BB&J performed its Phase I ESA in conformance with the scope and limitations of ASTM Practice E-1527-05 at the Subject Property located at southwest corner of Ogden and Lawndale Avenue in Lyons, Cook County, Illinois. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. Data gaps and findings identified during this Phase I ESA are summarized in the following subsections.

9.1 Data Gaps

In preparation of this 2007 Phase I ESA, the following data gaps were identified:

First Developed Use – BB&J was unable to account for historical use of the Subject Property within five year intervals dating back to 1940, as outlined within the ASTM E Practice. Based on historical records research, the Subject Property was undeveloped property in 1901. Since 1901 to the present, the Subject Property has consisted of a former quarry, a Former CCDD Fill Operation,, a former pond, a former gasoline station, a former asphalt plant, and office buildings. Documentation reviewed on the Cook County Recorder of Deeds website contained information pertaining to the donation of the Subject Property from MSC to the Village of Lyons. As BB&J was unable to locate documentation regarding ownership of the quarry or other structures on the Subject Property, BB&J anticipates that this data gap could materially affect our findings.

[31] Interim Authorization for CCDD fill operations is required under Section 22.51 of the Illinois Environmental Protection Act for sites where clean construction of demolition debris is being used as fill in a current or former quarry, mine, or other

Historical Property Operations – BB&J was unable to obtain specific information regarding the Subject Property's historical operations. Based on historical records research, from at least 1939 to 1953, the Subject Property appeared to have operated as a quarry; however, BB&J was unable to locate documentation indicating who owned and operated the quarry during that time. In 1962, the quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the quarry on the western adjoining property. Other than being identified as a Former CCDD Fill Operation, BB&J could not find more detailed information indicating what materials were used to fill the quarry. Since BB&J was unable to locate documentation regarding historical operations at the Subject Property, including ownership of the historical quarry and the source of fill material at the quarry, BB&J anticipates that this data gap could materially affect our findings.

9.2 Findings

Subject to the data gaps identified above, and based on BB&J's site reconnaissance and review of historical records, this assessment has revealed the following RECs in connection with the Subject Property:

Subject to the data gaps identified above, and based on BB&J's site reconnaissance and review of historical records, this assessment has revealed the following RECs[32] in connection with the Subject Property:

Historical Asphalt Plant Leaking Underground Pipe Incident – BB&J reviewed documentation that an underground pipe that connected a diesel AST to a historical asphalt plant leaked approximately 100 gallons of diesel fuel into the subsurface. BB&J obtained information from the Village of Lyons Building Department which indicated that the asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then by Palumbo Bros., Inc[33]. began operations on the west portion of the Subject Property in the early 1980s. Building records indicate that operations at the historical asphalt plant ceased in 1995. BB&J obtained a copy of the AE Report which addressed the work performed in response to the diesel release (IESDA Incident No. 931154). The AE Report stated that during a routine inspection in April 1993 of the asphalt plant, Mr. Mark Tubay of Orange Crush Recycle, Co. observed approximately 100 gallons of diesel fuel

excavation.

[32] The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground-water, or surface water of the property, ASTM E 1527-05.

missing from the on-site diesel AST. According to the AE Report, Mr. Tubay believed the loss of diesel fuel was due to theft or poor historic measurement practices of the diesel AST. However, also in April 1993, MSC, which operated the quarry on the west adjoining property, reported "organic material" visible from a single seep along a roadway leading into the west adjoining quarry approximately 50 feet below the surface of the Palumbo asphalt plant. A trench was created via a backhoe to contain the "organic material" along the roadway. Based on the assumption that the diesel loss and the visible "organic material" were related, Mr. Tubay contacted the IEMA to report a diesel release (IEMA Incident No. 931154).

A site reconnaissance of the historic asphalt plant and adjoining property was conducted by AE on May 14, 1993. Approximately 1/2-inch of "floating product" was observed in the trench where absorbent booms had been located to collect the "organic material". Water was observed "flowing into the trench [from the seep] at a rate of five to 10 gallons per minute and there was no visible signs of organic material flowing into the trench at the time of the site visit." The AE Report stated that Mr. Tubay indicated that "a total of 1,500 gallons of water [from the trench] had been transported off-site under a multi-stop permit." AE collected a grab sample of the "organic material" and a grab sample of the diesel fuel from the diesel AST for submittal to a laboratory for analysis of TPH for comparison "fingerprinting" purposes on May 14, 1993. According to the AE Report, the "organic material" was confirmed to be diesel fuel.

Upon confirmation that the material in the quarry matched the diesel fuel in the diesel AST, soil was excavated surrounding a 3/4-inch underground pipe that connected to the diesel AST. During the excavation, a pinhole leak was detected in the underground pipe. Approximately 50 cubic yards of diesel-impacted soil surrounding the underground pipe, diesel AST, and footings of the asphalt plant were excavated from an area approximately 16 feet wide by 20 long and disposed off-site. Four soil samples collected from the sidewalls of the excavation and one composite soil sample collected from the floor of the excavation were submitted for laboratory analysis of BTEX and PAHs on May 21, 1993. According to the Alpha Environmental Report, concentrations of benzene and several PAHs in soil samples collected from the excavation exceeded IEPA TACO Tier 1 soil ROs for commercial-industrial properties. However, based upon review of the analytical data by BB&J, only concentrations of naphthalene exceeded ROs for the construction worker inhalation exposure pathway[34]. The historic asphalt plant closed in 1995.

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[33] Palumbo Bros. Inc. is the parent company of Orange Crush Recycle Co.

[34] It should be noted that one benzene concentration exceeded the Class I soil component of the ground-water ingestion exposure route; however, due to Village of Lyons Ordinance No. 5-18-99-3 which prohibits the use of potable wells, this exceedance was

The EDR® Report further identified the aforementioned release as a LUST incident (Incident No. 931154) for a diesel release at the Orange Crush Recycle Co. facility, reported in May 1993. However, according to the EDR® Report, the LUST incident did not receive a NFR letter. BB&J submitted a FOIA request to the Illinois OFSM; however, the Illinois OFSM did not have any information regarding the diesel release from the underground pipe. Due to the (1) absence of documentation of regarding quarterly monitoring and sampling of the ground-water as recommended in the Palumbo Report and (2) Subject Property not having received a NFR to close the LUST incident, BB&J regards the Historical Asphalt Plant Leaking Underground Pipe Incident as an REC.

Historical Former Quarry Filling – Based on historical records research, from at least 1939 to 1953, the central and western portions of the Subject Property consisted of the limestone quarry (Former Quarry) which extended into the west adjoining property (Existing Quarry). The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property[35]. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation[36], BB&J was unable to locate specific information regarding the types of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject

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not considered by BB&J. Additionally, a concentration of benzo(a)pyrene exceeded the commercial-industrial ingestion exposure route, but did not exceed the Metropolitan background standards for Metropolitan Areas as indicated in Title 35 IAC 742, Appendix A, Table H.

[35] BB&J has attempted to contacted MSC regarding the specific nature of the materials used to fill the quarry; however, BB&J has not received a response.

[36] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.

Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within five to 55 feet bgs.

Analytical results from the soil samples collected during BB&J's previous investigations in the Former Quarry indicated that several VOCs, SVOCs, and RCRA metals were found to exceed the IEPA TACO soil ROs. Since (1) documentation regarding the filling of the quarry and nature of material used could not be obtained and (2) the analytical results of the fill material indicated that COCs were present, BB&J regards the Historical Former Quarry Filling as an REC.

In addition, one Historical[37] REC was identified associated with the Subject Property as follows:

Former On-site MSC USTs – Based upon information obtained from FOIA requests to the Illinois OSFM, MSC was identified as using multiple USTs at their facility, with multiple USTs formerly located on the Subject Property which had reportable releases. Information reviewed by BB&J included Notification for UST forms, Application for Permit to Remove UST forms, Removal Log of UST forms, and subsurface investigative reports. The table below summarizes the UST information reviewed and compiled by BB&J:

Tank ID No.	Product	Size (Gallons)	Date Installed	Date Removed	Reported LUST Incident	LUST Incident No.	NFR Letter	On-site / Off-site
1	Diesel	2,000	1981	9/12/1997	NO	NA	NA	Off-site
2	Gasoline	12,000	1978	9/12/1997	YES	971705	YES	Off-site
3	Gasoline	3,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
4	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
5	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
6	Diesel	8,000	4/25/1951	6/28/1995	YES	951401	YES	Off-site
7	Gasoline	1,000	5/10/1957	6/27/1995	YES	951401	YES	On-site

[37] Under the ASTM Practice, a "*historical recognized environmental condition*" is defined as "an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. The final decision rests with the *environmental professional* and will be influenced by the current impact of the *historical recognized environmental condition* on the *property*. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the *property* and has been remediated, with the such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the *Phase I Environmental Site Assessment* report. The environmental professional shall provide an opinion of the current impact on the property of this *historical recognized environmental condition* in the opinion section of the *report*. If the historical recognized environmental condition is determined to be a recognized environmental condition at the time of the *Phase I Environmental Site Assessment* is conducted, the condition shall be identified as such and listed in the conclusions section of the *report*."

8	Gasoline	6,000	5/10/1957	6/27/1995	YES	951401	YES	On-site
9	Diesel	8,000	5/10/1957	7/31/1997	YES	971392	YES	Off-site
10	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site
11	Lube Oil	400	5/10/1957	12/18/2002	YES	H2002-1156	YES	Off-site

USTs No. 1 and 2 were located off-site west of the MSC maintenance building. USTs No. 3, 4, 5, 7, and 8 were located in the northeast portion of the Subject Property at the former fueling station. USTs No. 6, 9, 10, and 11 were located off-site near the southeast corner of the current quarry at the intersection of 1st Avenue and 44th Street in Lyons, Illinois.

According to documents received from the Illinois OSFM, during the excavation of USTs No. 3, 4, 5, 7, and 8 in 1995, 330 cubic yards of petroleum-impacted soil and backfill were excavated and disposed off-site. Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from area of the former fueling station and beneath both Ogden and Lawndale Avenues by DAI Environmental Inc. indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. On August 27, 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate those exposure pathways. The NFR letter was released on February 16, 2006 and recorded on title on May 11, 2006. As the on-site USTs have obtained NFR letters for the releases and engineered barriers remain in place, BB&J regards the Former On-site MSC USTs as a Historical REC.

In addition, the following *de minimis*[38] environmental conditions were observed:

Concrete Pit – BB&J observed a concrete pit located on the north central portion of the Subject Property approximately 20 feet south of Ogden Avenue. The concrete pit was approximately four feet deep bgs, seven feet long, and four feet wide. A pipe leading out of the concrete pit toward Ogden Avenue generally in the direction of a storm water manhole cover was visible within the top north middle portion of the pit. Although the use of the concrete pit has not been made definitively, based on (1) its location relative to historic site access and (2) BB&J's general observations, it appears that it may have been formerly used as a weighing scale for trucks entering this part of the Subject Property. Because the pipe situated on the north wall of the concrete pit is (1) located relatively near the storm water manhole cover along Ogden Avenue and

[38] Conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. ASTM E 1527-05.

(2) oriented generally in that direction, it appears that it was used to drain rain water from the structure. The edges of the concrete pit appeared to be eroding and crumbling. The concrete pit contained approximately 3 feet of rainwater. Although BB&J was unable to observe the condition of the bottom of the pit due to standing water and accumulation of dirt, because of its likely use as a weighing scale for trucks, BB&J regards the Concrete Pit as a *de minimis* environmental condition.

Current Operations at the Subject Property – At the time of the site reconnaissance, the Subject Property consisted of a Former CCDD Fill Operation[39]. Reliable used the central portion of the Subject Property as a staging area that included a large pile of concrete, a pile of asphalt and a pile of bricks. BB&J contacted the IEPA Bureau of Land to determine if the Subject Property had a permit for the fill operation. Mr. Hubbard of the IEPA Bureau of Land stated that MSC has Interim Authorization[40] and that currently permits are not required. Ms. VanOrden, also with the IEPA Bureau of Land, accompanied Ms. Hargreaves on a site reconnaissance of the Subject Property on August 1, 2007. Ms. VanOrden stated that the Interim Authorization was for the filling of the adjacent quarry, operated by Reliable, located west of the Subject Property and not specifically for the Subject Property. BB&J obtained a list of CCDD fill operations that had interim authorization. The list included Reliable Lyons CCDD (site number 0311715020), located at 4226 S. Lawndale Avenue in Lyons, Cook County, Illinois. Because the observed contents of the debris piles appeared to be predominantly bricks, concrete and asphalt, BB&J regards the Current Operations at the Subject Property as a *de minimis* environmental condition.

Former On-site Historic Asphalt Plant UST – Based upon records reviewed from the Illinois OSFM, one 12,000-gallon gasoline UST was used by Palumbo Bros., Inc. at the historic asphalt plant. The gasoline UST was installed in September 1987 and based upon figures of the area, was located directly west of the historic asphalt plant in the west portion of the Subject Property. The gasoline UST was removed on January 20, 1995 with Illinois OSFM oversight as the asphalt plant was shut down. According to the Illinois OSFM Log of UST Removal, "no apparent contamination [was] observed", as written by Mr. Aaron Siegle, Storage Tank Safety Specialist for the Illinois OSFM, and no subsurface samples were required to be collected. BB&J also obtained a copy of the Certification of Removal certificate for Palumbo Bros., Inc. for the 10,000-

[39] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.
[40] Interim Authorization for CCDD fill operations is required under Section 22.51 of the Illinois Environmental Protection Act for sites where clean construction of demolition debris is being used as fill in a current or former quarry, mine, or other excavation.

gallon gasoline UST dated January 26, 1995. As the gasoline UST was documented by the Illinois OSFM as not having any releases, BB&J regards the Historic Asphalt Plant UST as a *de minimis* environmental condition.

Off-site Pole-mounted Transformers – BB&J observed three pole-mounted transformers located approximately 100 feet south (sidegradient) of the southern property line. It was unclear if the transformers contained PCBs. The transformers appeared in poor condition; they were rusted, and there was staining on the wood poles supporting the transformers. Due to the off-site and sidegradient location, BB&J regards the Pole-mounted Transformers as a *de minimis* environmental condition.

10.0 OPINION

The Subject Property has entered into IEPA's Site Remediation Program (SRP) to assess the need for further investigative or remedial activities at the Subject Property. Under the SRP cleanup program, the IEPA will review remedial activities and give technical assistance to the Village of Lyons in order to receive no further determinations from the IEPA. Additional investigations will be required to assess COCs at the aforementioned RECs. Once the Village of Lyons successfully demonstrates that environmental conditions at the remediation site do not represent a significant risk to human health or environment, the IEPA will issue a NFR letter signifying a release of the Village of Lyons from further responsibilities under the Illinois Environmental Protection Act.

With respect to the former fueling station located in the northeast portion of the Subject Property, BB&J considers the Former MSC USTs as a historical REC. As engineered barriers continue to remain in place in this area to mitigate the soil inhalation and ingestion pathways, BB&J does not recommend further investigations withinin this area.

11.0 DEVIATIONS

No deviations from ASTM 1527-05 occurred during the completion of this report.

12.0 ADDITIONAL SERVICES

12.1 Potential Asbestos-Containing Materials

The USEPA, under the NESHAP banned spray-applied surfacing ACM for fireproofing/insulating in 1973, while spray-applied ACM for decorative purposes was banned in 1978. In 1975, NESHAP banned installation of wet-applied and pre-formed asbestos pipe insulation, and pre-formed asbestos block insulation on boilers and hot water tanks.

BB&J did not observe potential ACM at the Subject Property.

12.2 Potential Lead-based Paint

The Consumer Product Safety Commission banned the production and sale of LBP for residential use in 1978. Contractors typically use paints commercially available to the public, which are subject to the LBP ban for residential use (i.e., the lead pigment was replaced by other pigments such as titanium dioxide).

No potential LBP was observed at the Subject Property.

13.0 REFERENCES

- EDR® Report, dated October 26, 2007;
- USGS 7.5 Minute Topographic Maps, Berwyn, Illinois, dated 1998;
- Historical topographic maps, dated 1901, 1953, 1963, 1972, 1980, and 1993;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Sanborn maps, dated 1930, 1951, and 1975;
- Village of Lyons Building Department Records;
- AE Report, dated December 7, 1993;
- DAI CACR, dated March 10, 1998;
- Attachments to CACR, dated July 29, 1999;
- DAI CACR Amendment, dated July 29, 1999;
- Preliminary Soil Gas Investigation, dated February 23, 2007;
- Phase II ESA: Commercial Development, dated June 13, 2007;
- Phase II ESA: Future Use, dated June 13, 2007;
- Phase II ESA: Community Center, dated June 26, 2007;

- Interview with Mr. Kevin Close, representative for the Village of Lyons;
- USEPA Enforcement and Compliance History Online (ECHO) (http://www.epa.gov/echo/); and,
- USEPA's Toxic Release Inventory (TRI) (http://www.epa.gov/enviro/html/tris/tris_query.html).

14.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The information in the report has been compiled from sources believed to be reliable. However, BB&J cannot guarantee the accuracy of information provided by others. BB&J has visually assessed the Subject Property, the land and improvements thereon, if any. It is impossible to personally have observed conditions that may have existed below the surface, or that may have been hidden within the structure or by improvements, or within areas that were not accessible, or that were otherwise covered by snow, gravel, grass, equipment, furniture, etc. Therefore, no representations are made regarding such matters unless they are specifically considered in this report.

The undersigned has completed this report, and BB&J certifies that this Phase I Environmental Site Assessment has been completed in accordance with ASTM 1527-05. Any exception to or deletion from this scope are discussed in Section 2.4.

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P.G.
Principal

15.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in 312.10 of 40 CFR 312. We have the specific qualifications base on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P.G.
Principal

TABLES

Table 1: Summary of ASTM E 1527-05 Information
Southwest Corner of Ogden and Lawndale Avenues

Site Information

Site Name: Village of Lyons Property, Former Lyons CCDD Fill Operation

Project Number: 0259001

Site Address: Southwest Corner of Ogden and Lawndale Avenues

City: Lyons

County: Cook

State: Illinois

Latitude: 41.815200

Longitude: 87.826900

General Site Setting

Current Property Use: The Subject Property consisted of a clean construction and demolition debris (CCDD) landfill that included a large pile of concrete, a pile of asphalt and a pile of bricks.

Acres: 17

Past Property Use: **Former Quarry / Former CCDD Fill Operation Area**
From at least 1939 to 1953, the central and western portions of the Subject Property consisted of the limestone Former Quarry which extended into the Existing Quarry on the west adjoining property. The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, do not appear to have been quarried. By 1962, the Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. Other than the Former Quarry being designated a Former CCDD Fill Operation, BB&J was unable to locate specific information regarding the nature of materials that were used to fill the portion of the Former Quarry that operated at the Subject Property or what company owned the quarry during that time. Based upon subsurface investigations by BB&J within this area, the primary subsurface soil type at the Subject Property consisted of stiff and medium stiff, gray and brown clay and clay fill. Traces of sand and gravel were encountered throughout the Subject Property, at depths of 0 to 60 feet bgs. Additionally, occasional ash, asphalt, wood and brick debris were encountered within five to 55 feet bgs.

From the early 1980s to 1995, an asphalt plant, operated first by Leininger Mid-States Paving Co., Inc. and then Palumbo Bros. Inc., was located on the western portion of the Subject Property within the Former Quarry. The historic asphalt plant closed in 1995. Since 1995, it appears this area of the western portion of the Subject Property, as well as portions of the central portions of the Subject Property, was used as a staging area for CCDD for filling in the Existing Quarry on the west adjoining property by Reliable. In addition, a pond (Former Pond) located along the former eastern edge of the Former Quarry near the north-central portion of the Subject Property was present from approximately 1980 to 2006. Since 2006, this area has been filled in and consisted of a level, vacant area.

Northeast Area of Subject Property
Several structures were present in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues in 1939 on approximately 0.368 acres. From 1951 to 1980, one structure was located at this area and resembles a fueling station. From 1988 to the present, no structures have existed in this area of the Subject Property. According to information obtained from the Illinois OSFM, five gasoline USTs operated by MSC were installed in 1957 and removed in 1995 at the location of a former fueling station at this corner. During the removal of the USTs, a release of gasoline was documented (IEMA Incident No. 971705). Subsequent subsurface investigations of the area in 1995, 1999, and 2001 from the area of the former fueling station and beneath both Ogden and Lawndale Avenues indicated that benzene and PAHs were present at concentrations above IEPA TACO Tier 1 soil commercial-industrial ROs for the soil inhalation and soil ingestion exposure routes at various locations throughout the property. During the subsurface investigations, it was determined that diesel fuel was also stored in the USTs at the former fueling station. In 2003, two asphalt barriers were installed as engineered barriers at the property to eliminate the soil inhalation and ingestion exposure pathways. In addition, the Village of Lyons has a ground-water ordinance which prohibits the use of potable wells (No. 5-18-99-3). The property obtained a NFR letter on February 16, 2006 and the NFR letter was recorded on title on May 11, 2006. Since 2006, this area has remained a level, vacant lot with two asphalt patches that serve as engineered barriers.

Table 1: Summary of ASTM E 1527-05 Information - Continued

Southwest Corner of Ogden and Lawndale Avenues

Southeast Area of Subject Property
Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building since at least 1930 with several railroad spurs emanating from the southwest adjoining property. From 1951 to at least 1975, the current MSC office building and an additional rectangular MSC warehouse building were located long Lawndale Avenue with the railroad spurs located to the west of the MSC buildings. In 1988, the railroad spurs were no longer present. From at least 1993 to 2002, an asphalt parking lot was located between the two MSC buildings. At the time of the site reconnaissance, the north MSC warehouse building was no longer present and the footprint of that building consisted of a vacant area. Only the asphalt parking lot and the current MSC building remained.

According to records obtained by the Cook County Recorder of Deeds, MSC owned the Subject Property from approximately 1988 to late 2005. On December 6, 2005, the Subject Property was acquired by the Village of Lyons. The remainder of the Existing Quarry and CCDD fill operation on the western adjoining property was acquired by Reliable.

Current Adjoining Use: North – Ogden Avenue, beyond which was Plank Road Meadow and an abandoned auto-repair service station.
South – Several MSC buildings (a maintenance and office building) and a vacant lot.
East – Lawndale Avenue and beyond which was a vacant restaurant on the southeast corner of Ogden and Lawndale Avenues, residential and commercial property, and Smith Park.
West – Existing Quarry operated by Reliable.

Past Adjoining Use: North – Ogden Avenue and beyond that as the Des Plaines River from at least 1901 to 1953. From at least 1963 to the present the adjoining property to the north appeared as Ogden Avenue and beyond that as Plank Road Meadow Park, the Des Plaines River and a structure formerly occupied by an auto service station was located northeast of the Subject Property, which at the time of the site reconnaissance was vacant.
South – Undeveloped property in 1901. Several of the structures currently occupied by MSC were present by 1939. From 1939 to the present, the south adjoining property appeared as two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot.
East – Lawndale Avenue and beyond that as a mix of residential and commercial property from 1901 to the late 1970s. Since the late 1970s to the present, the adjoining property to the east appeared as Lawndale Avenue and beyond that as commercial and residential property and Smith Park.
West – Undeveloped property in 1901, and as the Existing Quarry and beyond that as undeveloped property in 1939. From at least 1951 to 2002, the adjoining property to the west appeared as a roughly circular Existing Quarry.

Surrounding Area Use: Quarry, in use CCDD fill operation, residential and commercial property.

Topography: Level, slope on the west portion of Subject Property

Elevation: Approximately 616 feet above sea level (EDR Radius Map with GeoCheck)
Approximately 620 feet above NGVD [US Geological Survey 7.5 – minute series topographical map – Berwyn (IL) Quadrangle]

Geology: Fox; Urban land – Markham – Ashkum

Depth to Ground Water: The June 2007 Phase II ESA: Commercial Development encountered ground-water at approximately 5 to 19 feet bgs at locations within the northeast areas of the Subject Property, while the June 2007 Phase II ESA: Strategy and Sampling – Community Center encountered ground-water at approximately 11 to 13 feet bgs.

Flow Direction: Based on the June 2007 Phase II ESA: Commercial Development, dated June 13, 2007, ground-water flow appeared to be towards the southeast towards the Des Plaines River and the Chicago Sanitary and Ship Canal. In addition, based on the June 2007 Phase II ESA: Strategy and Sampling – Community Center, the ground-water flow appeared be radial from the south-central portion of the Subject Property to the north, west, and east. However, DAI conducted a hydrogeological investigation at the former fueling station on the northeast portion of the Subject Property as identified in the DAI CACR Amendment. Ground water was observed at depths that ranged approximately from five to 10 feet bgs in three permanent monitoring wells in this area. Ground water was encountered at a depth just above the limestone bedrock in each of the three permanent monitoring wells where water was observed. Based upon measured ground-water elevations, DAI estimated the ground-water flow direction in this area to be west-southwest at a hydraulic gradient of 0.022 feet / feet

Nearest Surface Water Body: Des Plaines River, located approximately 1/4- mile north of the Subject Property.

Number of Buildings: 1 – MSC office building

Roads Adjoining Site: Ogden Avenue to the north, Lawndale Avenue to the east.

Potable Water Supply: Village of Lyons, Illinois

Sewage Disposal System: Village of Lyons, Illinois

Notes on last page of table.

Table 1: Summary of ASTM E 1527-05 Information - Continued
Southwest Corner of Ogden and Lawndale Avenues

	Interior and Exterior Observations
Vent or Fill Pipes:	None Observed
Storage Tanks:	None Observed; however five former USTs were formerly located at the former fueling station in the northeast portion of the Subject Property.
Tank(s) Status:	All removed
Year Installed:	1957
Year Removed:	1995
Current Contents:	Not Applicable
Former Contents:	Gasoline and Diesel
Stains or Spillage:	LUST incident (951401) reported during removal
Odors:	Not Applicable
Pools of Liquid:	Not Applicable
Drums:	None Observed
Containers:	None Observed
Unidentified Containers:	None Observed
PCB-Containing Equipment:	BB&J observed three pole-mounted transformers located approximately 100 feet south (sidegradient) of the southern property line. It was unclear if the transformers contained PCBs, and the transformers appeared in poor condition. Specifically, the transformers appeared rusted, and there was staining on the wood supporting the transformers.
	Interior Observations
Heating System/Fuel Source:	Gas Furnace
Cooling System/Fuel Source:	Window Units
Electric Company:	Commonwealth Edison
Natural Gas Company:	Nicor
Stains or Corrosion:	None Observed
Floor Drain Locations:	Two floor drains in basement of MSC office building
Floor Drain Discharge:	Sanitary Sewer
Sumps:	One sump in basement of MSC office building
Sump Observations:	Slightly rusted
	Exterior Observations
Pits, Ponds or Lagoons:	BB&J observed a concrete pit located on the northern central boundary of the Subject Property, most likely used as a former scale.
Stained Soil/Pavement:	None Observed
Stressed Vegetation:	None Observed
Landfilling:	BB&J observed three large mounds of debris located in the central south side of the Subject Property. The mounds included concrete, asphalt, and bricks.
Waste Water Discharge:	None Observed
Wells:	7 monitoring wells were observed from BB&J's former investigations.
Septic System:	None Observed
Aerial Photo Source:	Illinois Natural Resources Geospatial Data Clearinghouse – www.isgs.uiuc.edu EDR Aerial Photo Decade Package TerraServer – www.terraserver.com
Aerial Photo Dates:	1939 (Illinois Natural Resources Geospatial Data Clearinghouse) 1951, 1962, 1988, and 1993 (EDR Aerial Photo Decade Package) 1998 and 2002 (TerraServer)
Fire Map Source:	EDR, dates: 1930, 1951, 1975

Notes on last page of table.

Table 1: Summary of ASTM E 1527-05 Information - Continued

Southwest Corner of Ogden and Lawndale Avenues

Standard Historical Sources

Title Source: Not Applicable

Title Information: Not Available

USGS Topo Map: Berwyn (IL) Quadrangle, 7.5-Minute Series (Topographic)

USGS Topo Map Date: 1998

Street Directory Name: EDR City Directory Abstract

Street Directory Source: EDR, Milford, Connecticut

Street Directory Dates: 1980, 1985, 1990, 1995, 2001 and 2006

Building Dept. Records: Not Available

Zoning Records: Not Available

Other Historical Info: Not Available

Interviews: Pursuant to requirements specified in ASTM E 1527-05, answers to a user questionnaire were provided by the Village of Lyons, Subject Property owner.

In addition, BB&J contacted the Illinois Environmental Protection Agency, Bureau of Land to determine if the Subject Property had a permit for the landfill. BB&J spoke with Mr. Tom Hubbard of the IEPA Bureau of Land regarding the permit. Mr. Hubbard stated that Material Services Corporation has Interim Authorization, and that currently permits are not required. However, Ms. VanOrden stated that the Interim Authorization was for the filling of the quarry adjacent to the Subject Property, and not for the Subject Property itself; therefore the three mounds of concrete, asphalt and brick should not have been located on the Subject Property.

References:

- EDR® Report, dated October 26, 2007;
- United States Geological Survey (USGS) 7.5 Minute Topographic Maps, Berwyn, Illinois (IL), dated 1998;
- Aerial photographs, dated 1939, 1951, 1962, 1988, 1993, 1998, and 2002;
- Village of Lyons Building Department Records;
- AE Report, dated December 7, 1993;
- DAI CACR, dated March 10, 1998;
- DAI Attachments to CACR, dated July 29, 1999;
- DAI CACR Amendment, dated February 4, 2004;
- Preliminary Soil Gas Investigation, dated February 23, 2007;
- BB&J Phase II ESA: Commercial Development, dated June 13, 2007;
- BB&J Phase II ESA: Future Use, dated June 13, 2007;
- Interview with Mr. Kevin Close, representative for the Village of Lyons;
- USEPA Enforcement and Compliance History Online (ECHO) (http://www.epa.gov/echo/); and,
- USEPA's Toxic Release Inventory (TRI) (http://www.epa.gov/enviro/html/tris/tris_query.html).

Notes:

AST – Aboveground Storage Tank
ASTM – American Society for Testing and Materials
bgs – Below ground surface
EDR – Environmental Data Resources, Inc. (Milford, Connecticut)
NGVD – National Geodetic Vertical Datum
NRCS – Natural Resources Conservation Service
PCBs – Polychlorinated biphenyls
US – United States
USGS – United States Geological Survey
UST – Under-ground Storage Tank

Prepared By/Date: MAE / 9.16..2007

Checked By/Date: MLH / 9.16.2007

Table 2: Summary of Historical Records Search

Southwest Corner of Ogden and Lawndale Avenues

Topographic Maps

Date of Publication:	1901
Source Name and Location:	EDR® Historical Topographic Map Report
Property including Subject Property:	Subject Property appeared to be at an elevation of 620 ft above the National Geodetic Vertical Datum (NGVD).
Adjoining Properties:	North: Ogden Avenue beyond that as the Des Plaines River South: Undeveloped property East: Lawndale Avenue and beyond that as residential and commercial property West: undeveloped property
Date of Publication:	1953
Source Name and Location:	EDR® Historical Topographic Map Report
Property including Subject Property:	The north, west, and central portions of the Subject Property appeared as a portion the Existing Quarry which extended to the west to Plainfield Road and 1st Avenue, with a surface elevation of 615 feet above the National Geodetic Vertical Datum of 1929. The railroad tracks originated from the southwest adjoining property and surrounded the quarry at the Subject Property to the north, east, and south. Several structures in the location of the current MSC building were present near the railroad track in the south portion of the Subject Property. Contour intervals from the bottom of the Former Quarry at the Subject Property and the Existing Quarry on the west adjoining property were not depicted
Adjoining Properties:	North: Ogden Avenue and beyond that as the Des Plaines River South: Two buildings, currently operated by Material Services Corporation East Lawndale Avenue and beyond that as residential and commercial property West: Existing Quarry
Date of Publication:	1963, 1972 and 1980
Source Name and Location:	EDR® Historical Topographic Map Report
Property including Subject Property:	Former Quarry at the Subject Property was been filled in to an elevation of approximately 615 feet above the National Geodetic Vertical Datum of 1929, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks were no longer shown on the Subject Property, and three buildings, one on the northeast corner (presumably the fueling station) and two on the southeast corner (the MSC buildings), appeared on the maps.
Adjoining Properties:	North: Ogden Avenue and beyond that as Plank Road Meadow park and the Des Plaines River South: Two buildings, currently operated by Material Services Corporation East: Lawndale Avenue and beyond that as residential and commercial property West: Existing Quarry
Date of Publication:	1993
Source Name and Location:	EDR® Historical Topographic Map Report
Property including Subject Property:	The Former Pond is present on the north-northeast portion of the Subject Property. The former fueling station structure located in the northeast portion of the Subject Property is no longer present. However, three buildings appeared on the map: one in the west portion of the Subject Property (presumably the historic asphalt plant) and two in the southeast portion of the Subject Property (the MSC buildings).
Adjoining Properties:	North: Ogden Avenue and beyond that as Plank Road Meadow park and the Des Plaines River South: Two buildings, currently operated by Material Services Corporation East: Lawndale Avenue and beyond that as Smith Park, residential and commercial property West: Existing Quarry
Date of Publication:	1998
Source Name and Location:	EDR® Historical Topographic Map Report
Property including Subject Property:	The 1998 topographic map is the same as the 1993 topographic map with the exception of the historical asphalt plant is no longer present.
Adjoining Properties:	North: Ogden Avenue and beyond that as Plank Road Meadow park and the Des Plaines River South: Two buildings, currently operated by Material Services Corporation East: Lawndale Avenue and beyond that as Smith Park, residential and commercial property West: Existing Quarry

Table 2: Summary of Historical Records Search

Southwest Corner of Ogden and Lawndale Avenues

Aerial Photographs

Date of Photograph:	1939
Source Name and Location:	Illinois Natural Resources Geospatial Data Clearinghouse website (www.isgs.uiuc.edu/nsdihome)
Subject Property:	**Quarry Area** The central and western portions of the Subject Property consisted of the limestone Former Quarry which extended into the Existing Quarry on the west adjoining property. The Former Quarry covered approximately 2/3 of the Subject Property and the edge of the Former Quarry was somewhat circular in shape, paralleling the north property boundary before curving southward and extending beyond the southwest boundary of the Subject Property. Railroad tracks originated from the southwest portion of the Subject Property and surrounded the northern, eastern, and southern edge of the Former Quarry. It should be noted that the land along the north and east property boundaries, as well as land located in the southeast portion of the Subject Property where the railroad tracks were located, does not appear to have been quarried. **Northeast Area of Subject Property** Several small structures were present in the northeast portion of the Subject Property at the corner of Ogden and Lawndale Avenues. **Southeast Area of Subject Property** Several structures were present in the southeast portion of the Subject Property in the area of the current MSC building.
Adjoining Properties:	North – Ogden Avenue and beyond that as the Des Plains River South – Two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot East – Lawndale Avenue and beyond that as a mix of residential and commercial property West – Existing Quarry and beyond that as undeveloped property
Surrounding Areas:	Undeveloped, residential and commercial property
Date of Photograph:	1951
Source Name and Location:	EDR Aerial Photo Decade Package, Milford Connecticut
Subject Property:	**Quarry** Same as 1939. **Northeast Area of Subject Property** One structure was located at this area and resembles a fueling station and matches the location of the former fueling station as observed in other historical documents. **Southeast Area of Subject Property** Current MSC building and an additional rectangular MSC office building located north of the current MSC building were located long Lawndale Avenue.
Adjoining Properties:	North – Ogden Avenue and beyond that as the Des Plains River South – Two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot East – Lawndale Avenue and beyond that as a mix of residential and commercial property West – Roughly circular Existing Quarry
Surrounding Areas:	Undeveloped, residential and commercial property
Date of Photograph:	1962
Source Name and Location:	EDR Aerial Photo Decade Package, Milford Connecticut
Subject Property:	**Quarry** Former Quarry was filled in, with the exception of the far western portion of the Subject Property that was graded down toward the Existing Quarry on the western adjoining property. The railroad tracks surrounding the Former Quarry were no longer present at the Subject Property after 1962. **Northeast Area of Subject Property** One structure was located at this area and resembles a fueling station and matches the location of the former fueling station as observed in other historical documents. **Southeast Area of Subject Property** Current MSC building and an additional rectangular MSC office building located north of the current MSC building were located long Lawndale Avenue

Table 2: Summary of Historical Records Search

Southwest Corner of Ogden and Lawndale Avenues

Adjoining Properties:	North – Ogden Avenue and beyond that as Plank Road Meadow park, the Des Plaines River and an auto service station located northeast of the Subject Property. South – Two other MSC buildings (a maintenance and office building) and beyond that as a vacant lot. East – Lawndale Avenue and beyond that as a mix of residential and commercial property. West – Roughly circular Existing Quarry.
Surrounding Areas:	Undeveloped, residential and commercial property
Date of Photograph:	1988
Source Name and Location:	EDR Aerial Photo Decade Package, Milford Connecticut
Subject Property:	**Quarry** The filled in quarry area appeared as level ground with the historic asphalt operation located on the west portion of the Subject Property, while the Former Pond was located in the north-northeast portion of the Subject Property at the location of the eastern edge of the quarry. Vegetated land appears to separate the historic asphalt plant and the Former Pond **Northeast Area of Subject Property** No structures are present in this area of the Subject Property and the area appeared to be paved. **Southeast Area of Subject Property** Current MSC building and an additional rectangular MSC office building located north of the current MSC building were located long Lawndale Avenue
Adjoining Properties:	North – Ogden Avenue and beyond that as Plank Road Meadow park, the Des Plaines River and an auto service station located northeast of the Subject Property. South – Parking lot and two buildings that are currently operated by Material Services Corporation. East – Lawndale Avenue and beyond that as commercial and residential property and Smith Park. West – Roughly circular Existing Quarry.
Surrounding Areas:	Undeveloped, residential and commercial property
Date of Photograph:	1993
Source Name and Location:	EDR Aerial Photo Decade Package, Milford Connecticut
Subject Property:	**Quarry** Same as 1988 **Northeast Area of Subject Property** Same as 1988 **Southeast Area of Subject Property** The two MSC buildings remained with an asphalt parking lot located between the two MSC buildings.
Adjoining Properties:	North – Ogden Avenue and beyond that as Plank Road Meadow park, the Des Plaines River and an auto service station located northeast of the Subject Property. South – Parking lot and two buildings that are currently operated by Material Services Corporation. East – Lawndale Avenue and beyond that as commercial and residential property and Smith Park. West – Roughly circular Existing Quarry.
Surrounding Areas:	Undeveloped, residential and commercial property
Date of Photograph:	1998, 2002
Source Name and Location:	TerraServer – www.terraserver.com
Subject Property:	**Quarry** Small piles that appear to be soil and concrete are scattered across the western and central portions of the Subject Property. Vegetated land surrounds the Former Pond located on the north-northeast portion of the Subject Property. **Northeast Area of Subject Property** Same as 1988 **Southeast Area of Subject Property** The two MSC buildings remained with an asphalt parking lot located between the two MSC buildings.
Adjoining Properties:	North – Ogden Avenue and beyond that as Plank Road Meadow park, the Des Plaines River and an auto service station located northeast of the Subject Property. South – Parking lot and two buildings that are currently operated by Material Services Corporation. East – Lawndale Avenue and beyond that as commercial and residential property and Smith Park. West – Roughly circular Existing Quarry.
Surrounding Areas:	Undeveloped, residential and commercial property

Table 2: Summary of Historical Records Search

Southwest Corner of Ogden and Lawndale Avenues

Aerial Photographs (con't)

City Directories

Street Directory Name:	Environmental Data Resources (EDR) City Directory Abstract
Street Directory Source:	EDR, Milford, Connecticut
Street Directory Dates:	1980, 1985, 1990, 1995, 2001 and 2006
Property including Subject Property:	The Subject Property was not listed in the EDR® City Directory Abstract.

Fire Insurance Maps

Street Directory Name:	Environmental Data Resources (EDR) Sanborn Maps
Street Directory Source:	EDR, Milford, Connecticut
Street Directory Dates:	1930, 1951, 1975
Property including Subject Property:	Sanborn maps provided by the EDR® were reviewed for the years 1930, 1951, and 1975. Only the far southeast portion of the Subject Property was depicted in each of the three years of coverage. According to EDR®, the symbol "0" on the edges of the Sanborn maps denotes that coverage of those areas does not exist. As such, the southeast portion of the Subject Property in 1930 consisted of two structures, one labeled as "mortor plant", and two railroad spurs which emanated from the southwest corner of the map. A small portion of the Former Quarry is located on the 1930 Sanborn map which indicated that the quarry was 30 feet deep. By 1950, the "mortor plant" was replaced by the rectangular MSC warehouse depicted in aerial photographs along Lawndale Avenue. The other structure depicted in 1930 remained, as well as the railroad spurs; however, the quarry's depth was not indicated. Rather, 1951 Sanborn map simply stated that "quarry [is] beyond." By 1975, the MSC warehouse remained, but the other structure located along Lawndale Avenue was depicted in a different configuration. The configuration is similar to the MSC office building observed to date. Additionally, one railroad spur was no longer present (one still remained), and a small square structure was depicted just west of the MSC office building. The 1975 Sanborn map also shows north of the MSC buildings that "quarry [is] beyond."

Prepared By/Date: MAE / 9.17.2007
Checked By/Date: AWB / 9.17.2007

Table 3: Summary of Environmental Records Sources and Contacts

Southwest Corner of Ogden and Lawndale Avenues

Standard Sources

Source Name and Location:	Aerial Photographs: Illinois Natural Resources Geospatial Data Clearinghouse – www.isgs.uiuc.edu EDR Aerial Photo Decade Package TerraServer – www.terraserver.com
Method of Contact:	Internet
Date of Initial Contact:	October 26, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	1939 (Illinois Natural Resources Geospatial Data Clearinghouse) 1951, 1962, 1988, and 1993 (EDR Aerial Photo Decade Package) 1998 and 2002 (TerraServer)
Source Name and Location:	Fire Insurance Maps: EDR Sanborn Map Search
Method of Contact:	EDR Request dated October 26, 2007
Date of Initial Contact:	October 26, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	Portions of Subject Property available for 1930, 1951, 1975
Source Name and Location:	Property Tax Files: Cook County Assessors Office
Method of Contact:	Website: www.cookcountyassessor.com
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	August 10, 2007
Summary of Information:	BB&J obtained parcel mapping, specific addresses and individual PIN numbers for the Subject Property. The PIN numbers included 18-02-207-003; -004; -009; and -011.
Source Name and Location:	Recorded Land Title Records: Cook County Recorder of Deeds
Method of Contact:	Website: www.ccrd.info/CCRD/il031/index.jsp
Date of Initial Contact:	August 10, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	BB&J was able to obtain information including warranty deeds, easement, memorandum, ordinance and agreements for PIN numbers 18-02-207-003; -004; -009; and -011.
Source Name and Location:	USGS Topographic Maps: United States Geological Survey 7.5 – minute series topographical map – Berwyn, Illinois Quadrangle , 1998 EDR Topographic Map Report – 1901, 1953, 1963, 1972, 1980, 1993 and 1998.
Method of Contact:	In person
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	Property appeared to be at an elevation of 615ft in the 1901 topographic map. Property appeared to be at an elevation of 615ft; however, the quarry depth is not indicated in the 1953 topographic map. Property appeared to be at an elevation of 615ft above National Geodetic Vertical Datum (NGVD) in the 1963, 1972, 1980, 1993 and 1998 topographic maps.

Table 3: Summary of Environmental Records Sources and Contacts

Southwest Corner of Ogden and Lawndale Avenues

Standard Sources (con't)

Source Name and Location:	City Directories: EDR – City Directory Abstract
Method of Contact:	Internet
Date of Initial Contact:	August 6, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	Reviewed city directories fro the years 1980, 1985, 1990, 1995, 2001 and 2006. The addresses for the Subject Property were unlisted.
Source Name and Location:	Building Department Records: Lyons Building Department – Village of Lyons Town Hall
Method of Contact:	In person
Date of Initial Contact:	August 1, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	BB&J located permits and building plans for the Palumbo Bros. asphalt-plant located at 8301 Ogden Avenue.
Source Name and Location:	Zoning and Land Use Records: Cook County Assessors Office
Method of Contact:	Website: www.cookcountyassessor.com
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	August 10, 2007
Summary of Information:	BB&J obtained parcel mapping, specific addresses and individual PIN numbers for the Subject Property. The PIN numbers included 18-02-207-003; -004; -009; and -011.

Additional Record Sources

Source Name and Location:	Health Department : Cook County Department of Public Health
Method of Contact:	FOIA Letter
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	BB&J has not received any further information regarding the Subject Property.
Source Name and Location:	Fire Department: Illinois Office of the State Fire Marshal
Method of Contact:	FOIA Letter
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	July 27, 2007 and August 10, 2007.
Summary of Information:	BB&J has received information for 8301 Ogden Avenue and 4226 Lawndale Avenue.

Table 3: Summary of Environmental Records Sources and Contacts

Southwest Corner of Ogden and Lawndale Avenues

Additional Record Sources (Con't)

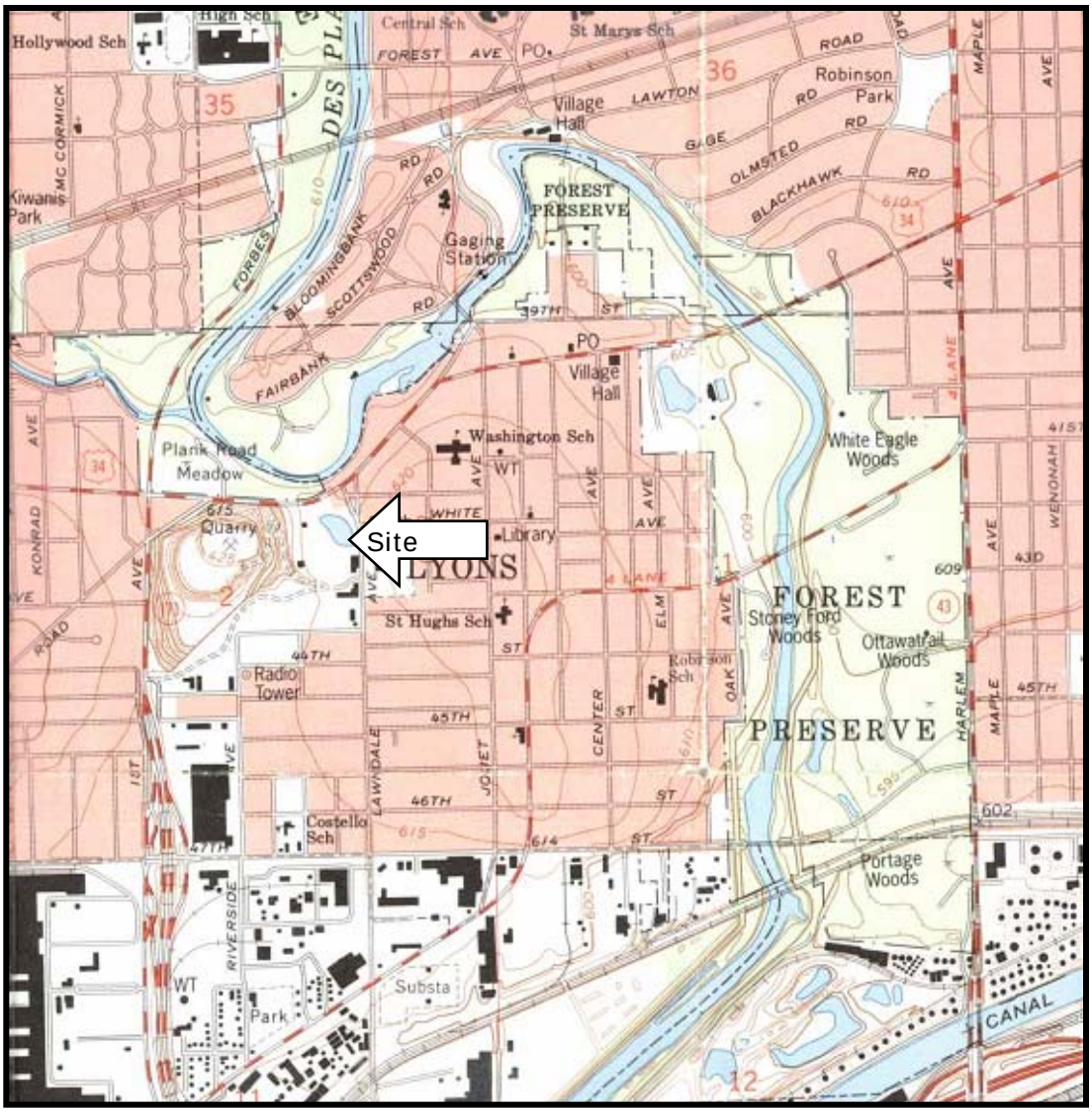
Source Name and Location:	Planning Department: Village of Lyons Town Hall
Method of Contact:	In person
Date of Initial Contact:	August 1, 2007
Date of Second Contact:	Not Applicable
Summary of Information:	Additional planning information was not available for the Subject Property.
Source Name and Location:	Regional Water Quality Agency: Illinois Environmental Protection Agency
Method of Contact:	Internet Request
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	August 10, 2007
Summary of Information:	BB&J has not received information from the Illinois Water Quality Division regarding the Subject Property.
Source Name and Location:	Additional Records – Federal Environmental Protection Agency
Method of Contact:	Internet Request
Date of Initial Contact:	July 26, 2007
Date of Second Contact:	August 10, 2007
Summary of Information	BB&J has received responses for the following addresses: 8301 Ogden Avenue, 4226 Lawndale Avenue, 4226 Riverside, and 4228 Lawndale Avenue.

Prepared By/Date: MLH / 09.16.07
Checked By/Date: AWB / 09.16.07

FIGURES

Source: U.S. Geological Survey Quadrangle Berwyn, Illinois. 7.5 Minute Series (Topographic), Dated 1993.
T 38N
R 12E
S 2

N



0 1/4 1/2 1 MILE

0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: JDM / 10.05.07
Checked by/Date: AWB / 10.15.07

Village of Lyons Property Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project No. 0259001 Figure 1

Sources:
-Subsurface investigation performed by Ms. Michele Hargreaves of Bradburne, Briller & Johnson, LLC on August 1, 2007.
-Aerial photograph reviewed on TerraServerUSA, dated 2002 (http://terraserver.homeadvisor.msn.com/default.aspx)

N

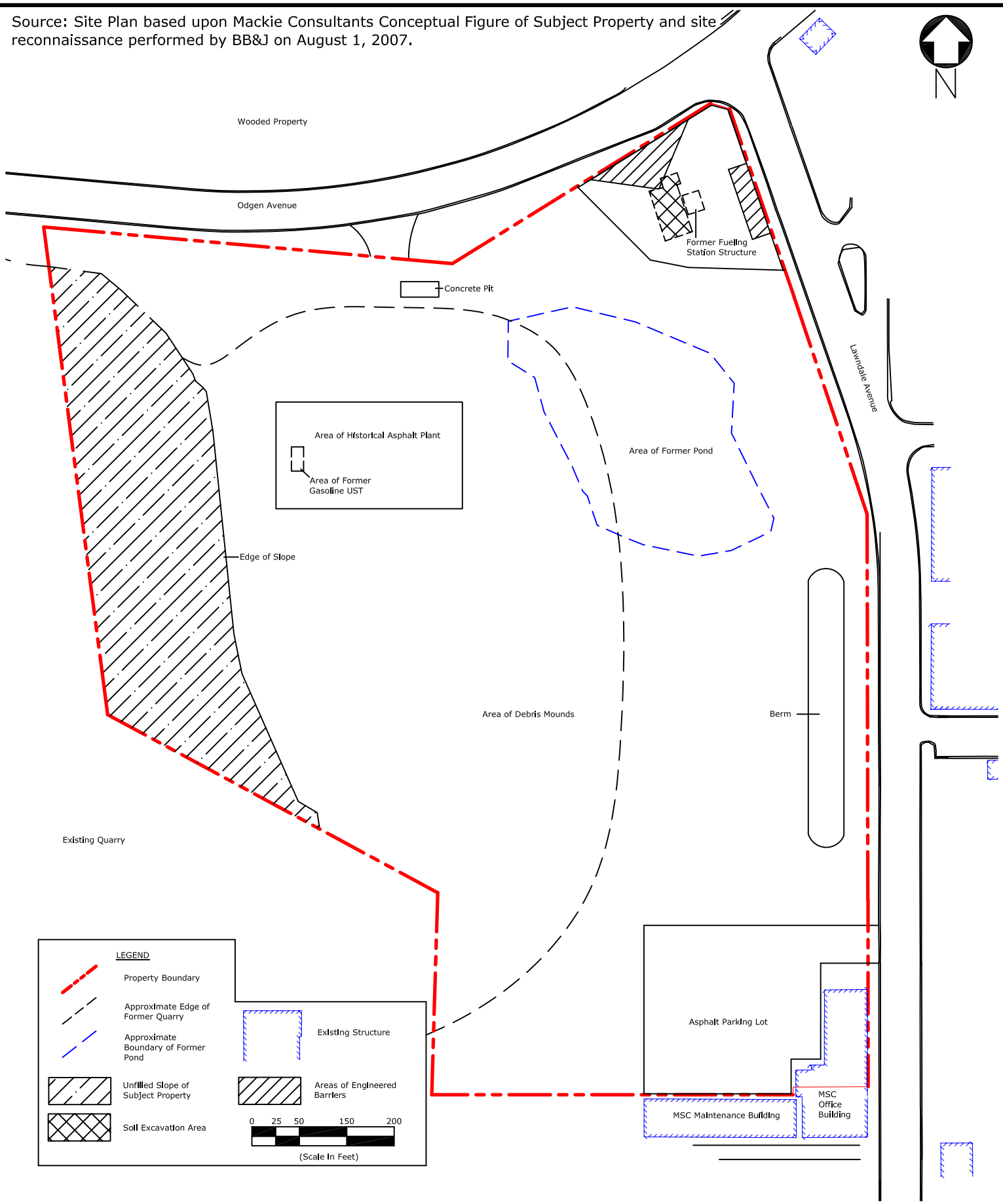
LEGEND

Subject Property

Prepared by/Date: JDM / 10.11.07
Checked by/Date: AWB / 10.11.07

Village of Lyons Property Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site and Vicinity Plan Project 0259001 Figure 2

Source: Site Plan based upon Mackie Consultants Conceptual Figure of Subject Property and site reconnaissance performed by BB&J on August 1, 2007.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Village of Lyons Property Southwest Corner of Ogden and Lawndale Avenues Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Plan Project No. 0259001 Figure 3

APPENDIX A

SITE PHOTOGRAPHS

Photograph 1 – View north from within Subject Property.

Photograph 2 – View south from within Subject Property.

Photograph 3 – View east from within Subject Property.

Photograph 4 – View west from Subject Property toward Existing Quarry.

Photograph 5 – View north from Subject Property toward Ogden Avenue and wooded area.

Photograph 6 – View north From Subject Property toward the asphalt engineered barriers located in the northeast corner of Subject Property.

Photograph 7 – View east toward two Materials Service Corporation buildings.

Photograph 8 – View east toward pile of concrete.

Photograph 9 – View east toward piles of bricks and asphalt.

Photograph 10 – View west toward concrete pit located on the north side of the Subject Property.

Photograph 11 – View south toward three pole-mounted transformers located on south adjoining property.

APPENDIX B

EDR RADIUS MAP WITH GEOCHECK®

The EDR Radius Map
with GeoCheck®

Village of Lyons Property
4226 Lawndale Avenue
Lyons, IL 60534

Inquiry Number: 2062274.2s

October 26, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	6
Orphan Summary	65
EPA Waste Codes	EPA-1
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-9
Physical Setting Source Records Searched	A-43

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

4226 LAWNDALE AVENUE
LYONS, IL 60534

COORDINATES

Latitude (North):	41.814700 - 41˚ 48' 52.9''
Longitude (West):	87.826500 - 87˚ 49' 35.4''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	431350.9
UTM Y (Meters):	4629320.0
Elevation:	616 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	41087-G7 BERWYN, IL
Most Recent Revision:	1998

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 6 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
RELIABLE MATERIALS-LYONS QURRY 4226 LAWNDALE AVENUE LYONS, IL 60534	FINDS	110030442821
RELIABLE LYONS CCDD 4226 LAWNDALE AVE LYONS, IL 60534	AIRS	N/A
4226 LAWNDALE AVE 4226 LAWNDALE AVE LYONS, IL 60534	IN Spills	N/A
D&S ENTERPRISES 4225 LAWNDALE AVE LYONS, IL 60534	FINDS	110018257526
MATERIAL SERVICE CORPORATION 4226 LAWNDALE AVENUE LYONS, IL 60534	MLTS	N/A

EXECUTIVE SUMMARY

MATERIAL SERVICE CORP YARD 18 4226 S LAWNDALE AVE LYONS, IL 60534	UST	N/A
MATERIAL SERVICE CORP. 4226 SOUTH LAWNDALE AVE. (YARD 18-L LYONS, IL 60534	LUST NFA/NFR Letter: 2/16/2006 NFA/NFR Letter: 11/27/2002	N/A
MATERIAL SERVICE CORP YARD 18 4226 LAWNDALE AVE LYONS, IL 60534	RCRA-SQG FINDS	ILD043908888

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
Delisted NPL ..... National Priority List Deletions
NPL LIENS ..... Federal Superfund Liens
CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned
RCRA-TSDF ..... Resource Conservation and Recovery Act Information
RCRA-LQG ..... Resource Conservation and Recovery Act Information
ERNS ..... Emergency Response Notification System
HMIRS ..... Hazardous Materials Information Reporting System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
DOD ..... Department of Defense Sites
FUDS ..... Formerly Used Defense Sites
US BROWNFIELDS ..... A Listing of Brownfields Sites
CONSENT ..... Superfund (CERCLA) Consent Decrees
ROD ..... Records Of Decision
UMTRA ..... Uranium Mill Tailings Sites
ODI ..... Open Dump Inventory
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS ..... Section 7 Tracking Systems
LUCIS ..... Land Use Control Information System
DOT OPS ..... Incident and Accident Data
ICIS ..... Integrated Compliance Information System

EXECUTIVE SUMMARY

DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
US CDL ..... Clandestine Drug Labs
RADINFO ..... Radiation Information Database
LIENS 2 ..... CERCLA Lien Information
PADS ..... PCB Activity Database System
MINES ..... Mines Master Index File
RAATS ..... RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

CAT ..... Category List
SWF/LF ..... Available Disposal for Solid Waste in Illinois - Solid Waste Landfills Subject to State Surcharge
UIC ..... Underground Injection Wells
IL NIPC ..... Solid Waste Landfill Inventory
DRYCLEANERS ..... Illinois Licensed Drycleaners
IMPDMENT ..... Surface Impoundment Inventory
BROWNFIELDS ..... Municipal Brownfields Redevelopment Grant Program Project Descriptions
CDL ..... Meth Drug Lab Site Listing

TRIBAL RECORDS

INDIAN RESERV ..... Indian Reservations
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
INDIAN UST ..... Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants ... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 06/26/2007 has revealed that there are 3

CORRACTS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
AKZO NOBEL CHEMICALS INC	***8201 W 47TH ST***	***1/2 - 1 S***	***46***	***57***
AKZO CHEMIE AMERICA	***8401 W 47TH ST***	***1/2 - 1 SSW***	***47***	***59***
TARACORP IND MCCOOK PLT	***7753 WEST 47TH STREET***	***1/2 - 1 SE***	***48***	***62***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/13/2006 has revealed that there are 5 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
QUANTUM GRINDING CORP	***4205 LAWNDALE AVE***	***0 - 1/8 ENE***	***B12***	***31***
PALUMBO BROTHERS INC	***8301 W OGDEN AVE***	***1/8 - 1/4 WNW***	***D17***	***35***
ASPAN FRAME & BODYWERKS	8044 OGDEN AVE	1/8 - 1/4 WNW	D20	37
DES PLAINES VALLEY MOSQUITO AB	***8130 OGDEN AVENUE***	***1/8 - 1/4 WNW***	***E24***	***41***
CONDUCTORS UNLIMITED	***4400 S LAWNDALE***	***1/8 - 1/4 S***	***25***	***42***

STATE AND LOCAL RECORDS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Illinois Environmental Protection Agency's Category List.

A review of the SHWS list, as provided by EDR, and dated 08/28/2007 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
MORECO	***7601 WEST 47TH STREET***	***1/2 - 1 SE***	***49***	***63***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Illinois Environmental Protection Agency's LUST Incident Report.

A review of the LUST list, as provided by EDR, and dated 08/21/2007 has revealed that there are 21 LUST sites within approximately 0.5 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MATERIAL SERVICE CORP. NFA/NFR Letter: 1/26/2007	4220 RIVERSIDE DR.	0 - 1/8 SE	9	30
D&S ENTERPRISES NFA/NFR Letter: 6/30/1998	4225 LAWNDALE AVE.	0 - 1/8 E	B11	31
ORANGE CRUSH RECYCLE CO.	8301 WEST OGDEN AVE.	1/8 - 1/4 WNW	D18	36
NANCY'S GAS & FOOD MART	***8050 WEST OGDEN AVE.***	***1/8 - 1/4 WNW***	***D22***	***40***
B & M SERVICE	8212 WEST OGDEN AVE.	1/4 - 1/2 WNW	E28	46
LYON AROUND LLC NFA/NFR Letter: 2/8/2006	8499 WEST OGDEN AVENUE	1/4 - 1/2 WNW	29	46
LYONS SERVICE CTR. NFA/NFR Letter: 4/9/1998	4323 JOLIET RD.	1/4 - 1/2 ESE	30	47
SHELL OIL CO. NFA/NFR Letter: 2/4/2005	8451WEST OGDEN AVE. /	1/4 - 1/2 W	F31	47
SHELL OIL NFA/NFR Letter: 2/4/2005	8451 WEST OGDEN AVE. /	1/4 - 1/2 W	F32	48
AIR SAVERS, INC. NFA/NFR Letter: 12/9/1999	8432 WEST 44TH PL.	1/4 - 1/2 SW	38	52
TZOUMAS, GUS	8542 WEST OGDEN AVE.	1/4 - 1/2 WNW	H40	53
FREEWAY FORD INC NFA/NFR Letter: 4/24/2006	***8445 W 45TH***	***1/4 - 1/2 SW***	***41***	***54***
AUTO ZONE NFA/NFR Letter: 6/7/2001	1 BLDG. WEST OF 8542 OG	1/4 - 1/2 WNW	H42	55
BANK OF LYONS	8553 OGDEN AVE.	1/4 - 1/2 WNW	H43	55
BANK OF LYONS	8553 WEST OGDEN AVE.	1/4 - 1/2 WNW	H44	56
AUTO ZONE NFA/NFR Letter: 6/7/2001	8556 WEST OGDEN AVE.	1/4 - 1/2 WNW	H45	56

Lower Elevation	Address	Dist / Dir	Map ID	Page
CAREFREE INVESTMENTS NFA/NFR Letter: 6/24/2003	8030 WEST OGDON AVE.	1/8 - 1/4 NNW	16	35
ZEPHYER SERVICE NFA/NFR Letter: 2/9/1990	PLAINFIELD / 1ST AVE.	1/4 - 1/2 W	G34	49
TOWER FUNERAL HOME	4007-11 SOUTH JOLIET AV	1/4 - 1/2 NE	36	51
AMOCO OIL CO. #18595 NFA/NFR Letter: 4/22/2003	8501 WEST OGDEN AVE.	1/4 - 1/2 WNW	37	52
SHELL OIL PRODUCTS US NFA/NFR Letter: 2/4/2005	8451WEST OGDEN AVENUE	1/4 - 1/2 WNW	39	53

LUST TRUST: In case sufficient funds are not available in the Underground Storage Tank Fund, requests for payment are entered on the Payment Priority List by "queue date" order. As required by the Environmental Protection Act, the queue date is the date that a complete request for partial or final payment was received by the Agency. The queue date is "officially" confirmed at the end of the payment review process when a Final Decision Letter is sent to the site owner.

A review of the LUST TRUST list, as provided by EDR, and dated 08/01/2007 has revealed that there is

EXECUTIVE SUMMARY

1 LUST TRUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NANCY'S GAS & FOOD MART	***8050 WEST OGDEN AVE.***	***1/8 - 1/4 WNW***	***D22***	***40***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Illinois State Fire Marshal's STC Facility List.

A review of the UST list, as provided by EDR, and dated 06/25/2007 has revealed that there are 6 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
LYONS ELECTRIC CO	4225 LAWNDALE AVE	0 - 1/8 E	B10	30
PALUMBO BROS INC	8301 W OGDEN AVE	1/8 - 1/4 WNW	D19	36
MINUTEMAN	8050 W. OGDEN AVENUE	1/8 - 1/4 WNW	D21	37
MINUTEMAN SERVICE STATION	8050 W OGDEN AVE	1/8 - 1/4 WNW	D23	41
DES PLAINES VALLEY MOSQUITO	8130 OGDEN AVE PO BOX 3	1/8 - 1/4 WNW	E26	43

Lower Elevation	Address	Dist / Dir	Map ID	Page
FORMER COUNTRY BUFFET RESTAURA	8030 OGDEN AVENUE	0 - 1/8 N	C15	33

ENG CONTROL: Sites with Engineering Controls.

A review of the ENG CONTROLS list, as provided by EDR, and dated 08/07/2007 has revealed that there is 1 ENG CONTROLS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
ZEPHYR SERVICE STATION	***4200 SOUTH 1ST AVENUE***	***1/4 - 1/2 W***	***G35***	***50***

INST CONTROL: Legal or administrative restrictions on land use and/or other activities (e.g., groundwater use restrictions) which effectively limit exposure to contamination may be employed as alternatives to removal or treatment of contamination.

A review of the Inst Control list, as provided by EDR, and dated 08/07/2007 has revealed that there is 1 Inst Control site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
ZEPHYR SERVICE STATION	***4200 SOUTH 1ST AVENUE***	***1/4 - 1/2 W***	***G35***	***50***

SRP: Illinois Environmental Protection Agency, Site Remediation Program Database

A review of the SRP list, as provided by EDR, and dated 08/07/2007 has revealed that there are 3 SRP sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
QUARRY RELAMATION DISTRICT TIF	4152 LAWNDALE AVENUE	0 - 1/8 NE	13	32
ASPAN FRAME & BODY WERKS	8044 OGDEN AVENUE	1/4 - 1/2 NNE	33	48
ZEPHYR SERVICE STATION	***4200 SOUTH 1ST AVENUE***	***1/4 - 1/2 W***	***G35***	***50***

EXECUTIVE SUMMARY

EDR PROPRIETARY RECORDS

EDR Historical Auto Stations: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

A review of the EDR Historical Auto Stations list, as provided by EDR, has revealed that there is 1 EDR Historical Auto Stations site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
GOLDENTHAL ISAAC	8219 OGDEN AV	0 - 1/8 N	C14	32

EDR Historical Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

A review of the EDR Historical Cleaners list, as provided by EDR, has revealed that there is 1 EDR Historical Cleaners site within approximately 0.25 miles of the target property.

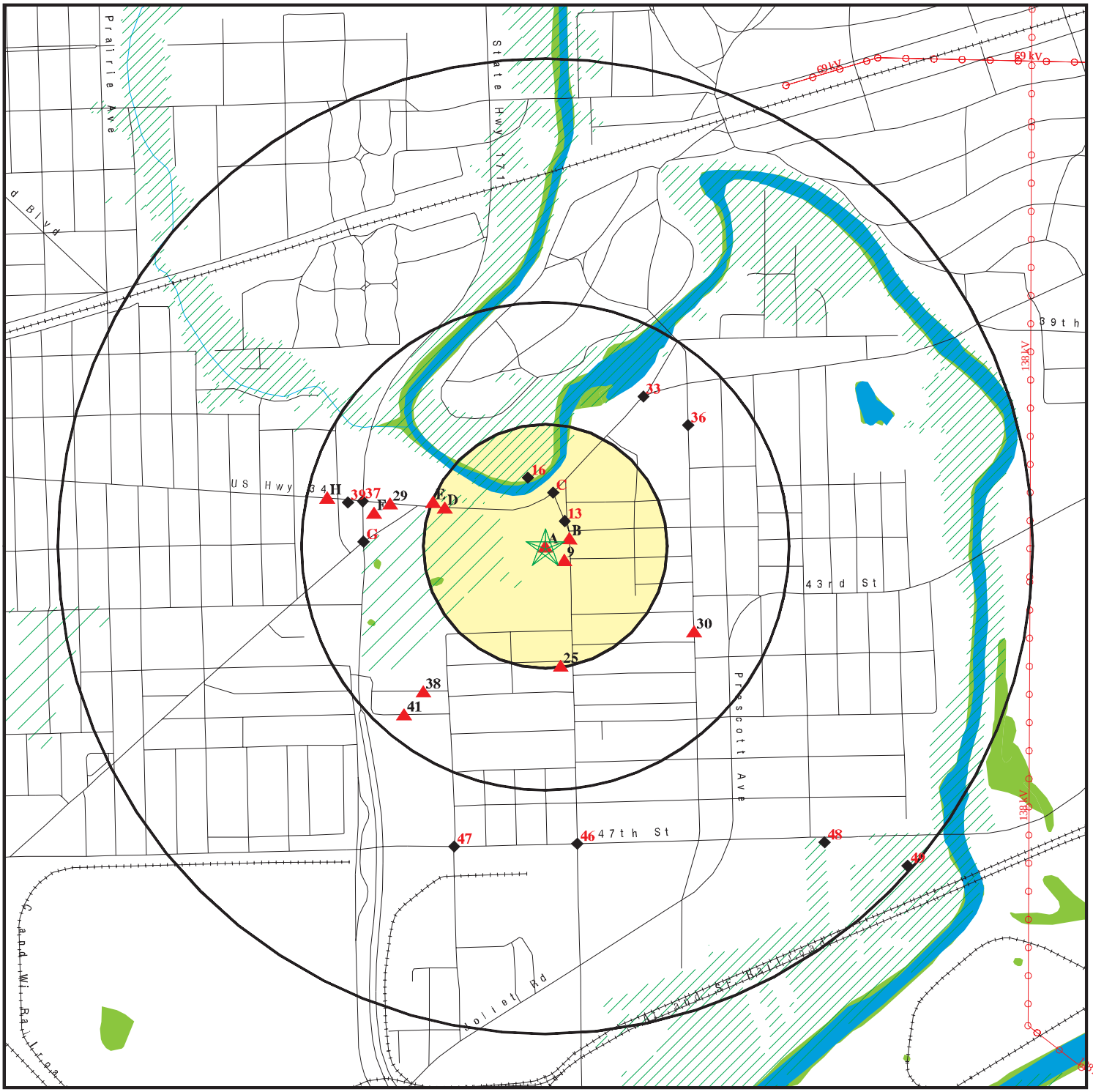
Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
DOUGLAS RUG CARPET CLEANERS	8405 OGDEN AV	1/8 - 1/4 WNW	E27	46

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
AMERICAN GRADING COMPANY	CERC-NFRAP
RIVERSIDE, VILLAGE OF	FINDS, SWF/LF
FORMER SER STATION	UST
AMOCO	UST
LYON AROUND	UST
RELIABLE MATERIALS LYONS LLC	FINDS

OVERVIEW MAP - 2062274.2s



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Village of Lyons Property	CLIENT: Bradburne, Briller & Johnson
ADDRESS: 4226 Lawndale Avenue Lyons IL 60534	CONTACT: Kevin McCartney
LAT/LONG: 41.8147 / 87.8265	INQUIRY #: 2062274.2s
	DATE: October 26, 2007 3:19 pm

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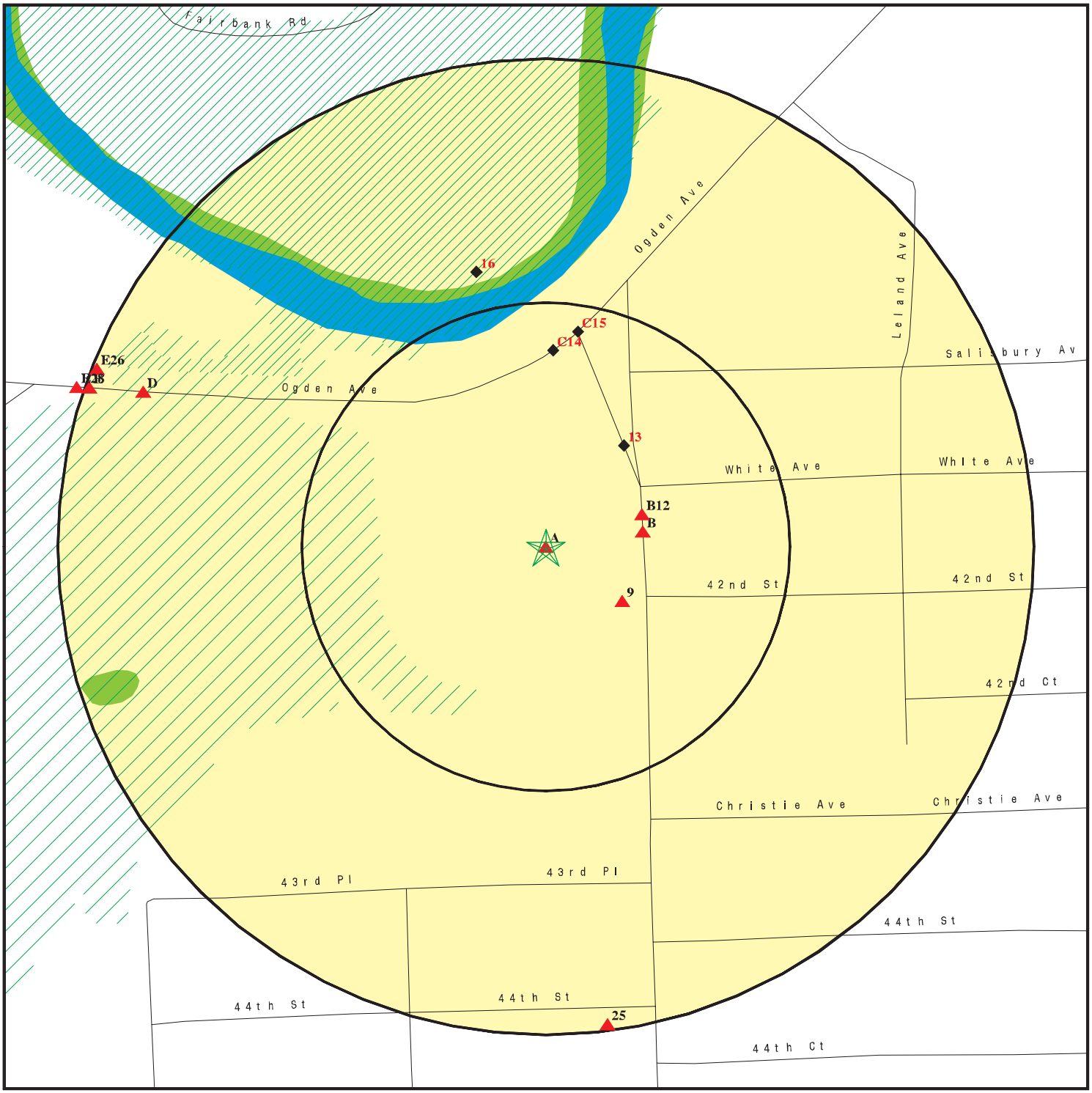
DETAIL MAP - 2062274.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Village of Lyons Property	CLIENT: Bradburne, Briller & Johnson
ADDRESS: 4226 Lawndale Avenue	CONTACT: Kevin McCartney
Lyons IL 60534	INQUIRY #: 2062274.2s
LAT/LONG: 41.8147 / 87.8265	DATE: October 26, 2007 3:19 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	3	NR	3
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.	X	0.250	1	4	NR	NR	NR	5
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS	X	TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
State Haz. Waste		1.000	0	0	0	1	NR	1
CAT		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
IL NIPC		0.500	0	0	0	NR	NR	0
LUST	X	0.500	2	3	16	NR	NR	21
LUST TRUST		0.500	0	1	0	NR	NR	1

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	X	0.250	2	4	NR	NR	NR	6
SPILLS	X	TP	NR	NR	NR	NR	NR	0
ENG CONTROLS		0.500	0	0	1	NR	NR	1
Inst Control		0.500	0	0	1	NR	NR	1
SRP		0.500	1	0	2	NR	NR	3
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
IMPDMENT		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
AIRS	X	TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0
EDR Historical Auto Stations		0.250	1	0	NR	NR	NR	1
EDR Historical Cleaners		0.250	0	1	NR	NR	NR	1

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
A1 Target Property	**RELIABLE MATERIALS-LYONS QURRY 4226 LAWNDALE AVENUE LYONS, IL 60534**	**FINDS**	**1010177899 110030442821**

Site 1 of 8 in cluster A

Actual: 617 ft.

FINDS:

Other Pertinent Environmental Activity Identified at Site

PCS (Permit Compliance System) is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

A2 Target Property	**RELIABLE LYONS CCDD 4226 LAWNDALE AVE LYONS, IL 60534**	**AIRS**	**S107745489 N/A**

Site 2 of 8 in cluster A

Actual: 617 ft.

IL AIRS:

Facility ID:	1605
Facility Address 2:	Not reported
Contact Name:	Len Dianni
Contact Title:	Not reported
Contact Tele:	708-442-9014
Contact Extention:	Not reported
Contact EMail:	Not reported
Contact Fax:	708-442-0294
ID Number:	031171AAW
Cease Operation Date:	12/15/2005
SIC Code:	1422
Address Type Code:	LOC
Company Name:	Reliable Lyons CCDD
Company Address:	222 N LaSalle St
Company City,St,Zip:	Chicago, IL 60601
Contact Name:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Fax:	Not reported
Contact Extention:	Not reported
Contact Email:	Not reported
ID Number:	031171AAW
Ceased Operation Date:	12/15/2005
SIC Code:	1422
Address Type:	COMP
Point ID:	Not reported
Control ID:	Not reported
Stack ID:	Not reported
Latitude:	41:48:49.5720
Lonitude:	87:49:54.8400
Decimal Latitude:	41.81377
Decimal Longitude:	87.8319
Zone:	16
Vertical:	4629.221
Horizontal:	430.901
Method:	019
Datum:	NAD27
Map Scale:	12000

RELIABLE LYONS CCDD (Continued) **S107745489**

Where Measured:	Center Of Facility
Date Measured:	9/18/2003
Accuracy:	20
Last Updated By:	EPA2600
Last Update Date:	9/18/2003 9:00:00 AM
Forced Vertical:	4629.221
Forced Horizontal:	430.901
Lambert North:	3200318.266
Lambert East:	3452764.334
Coordinate Source:	USGS Berwyn NW 3.75' DOQ
Reference Point:	102
County Code:	Not reported
Year:	1994
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	2.52950
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1993
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	130.11340
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1997
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	31.17000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1997
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	14.84000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported

RELIABLE LYONS CCDD (Continued) **S107745489**

CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1997
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.16000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1996
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	16.58000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1996
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	7.89000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1996
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1995
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	Not reported
Last Updated Date:	/ /

RELIABLE LYONS CCDD (Continued) **S107745489**

Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1995
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	0.39780
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1994
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	19.39010
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2004
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	1.23318
Last Updated By:	EPA2591
Last Updated Date:	09/25/03
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2004
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.51714
Last Updated By:	EPA2591
Last Updated Date:	09/25/03
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2003
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART

RELIABLE LYONS CCDD (Continued) **S107745489**

Tons per Year:	1.23318
Last Updated By:	EPA2591
Last Updated Date:	09/25/03
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2003
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.51714
Last Updated By:	EPA2591
Last Updated Date:	09/25/03
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1998
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	50
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1998
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	23.82000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1998
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC

RELIABLE LYONS CCDD (Continued) **S107745489**

Year:	2004
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	0
Last Updated By:	EPA2499
Last Updated Date:	04/26/05
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2004
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	0
Last Updated By:	EPA2499
Last Updated Date:	04/26/05
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1996
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	0.39780
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1997
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	0.39780
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1996
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported

RELIABLE LYONS CCDD (Continued) **S107745489**

CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1997
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1999
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	2.22000
Last Updated By:	EPA2499
Last Updated Date:	04/27/00
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1999
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	1
Last Updated By:	EPA2499
Last Updated Date:	04/27/00
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1999
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.22000
Last Updated By:	EPA2499
Last Updated Date:	04/27/00
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1998
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	4.11840
Last Updated By:	Not reported
Last Updated Date:	/ /

RELIABLE LYONS CCDD (Continued) **S107745489**

Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1998
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2005
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	1.23318
Last Updated By:	EPA2110
Last Updated Date:	04/26/05
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2005
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	1.23318
Last Updated By:	EPA2110
Last Updated Date:	04/26/05
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1999
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	4.11840
Last Updated By:	EPA2110
Last Updated Date:	06/30/99
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1999
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10

RELIABLE LYONS CCDD (Continued) **S107745489**

Tons per Year:	0.99450
Last Updated By:	EPA2110
Last Updated Date:	06/30/99
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2000
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	2.47000
Last Updated By:	EPA2499
Last Updated Date:	04/09/01
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2000
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	1.18000
Last Updated By:	EPA2499
Last Updated Date:	04/09/01
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2000
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.22000
Last Updated By:	EPA2499
Last Updated Date:	04/09/01
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1992
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	31.45000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI

RELIABLE LYONS CCDD (Continued) **S107745489**

Year:	1992
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	17.31000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1992
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.21600
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	2001
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	2.12000
Last Updated By:	EPA2499
Last Updated Date:	03/17/03
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2001
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	1
Last Updated By:	EPA2499
Last Updated Date:	03/17/03
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2001
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0
Last Updated By:	EPA2499
Last Updated Date:	04/08/02
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported

RELIABLE LYONS CCDD (Continued) **S107745489**

CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	2000
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	1.23318
Last Updated By:	EPA2110
Last Updated Date:	05/08/00
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2000
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	EPA2110
Last Updated Date:	05/08/00
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1993
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	107.15840
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1993
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	30.42330
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1993
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.19770
Last Updated By:	Not reported
Last Updated Date:	/ /

RELIABLE LYONS CCDD (Continued) **S107745489**

Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	2002
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	0.50000
Last Updated By:	EPA2499
Last Updated Date:	03/17/03
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2002
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	0.23000
Last Updated By:	EPA2499
Last Updated Date:	03/17/03
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2002
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0
Last Updated By:	EPA2499
Last Updated Date:	03/17/03
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1992
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	130.11340
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2001
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART

RELIABLE LYONS CCDD (Continued) **S107745489**

Tons per Year:	1.23318
Last Updated By:	EPA2110
Last Updated Date:	05/08/00
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2001
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	EPA2110
Last Updated Date:	05/08/00
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1995
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	25.54000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1995
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	12.16000
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1995
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.13200
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC

RELIABLE LYONS CCDD (Continued) **S107745489**

Year:	1994
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	48.52290
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	1994
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	16.40090
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1994
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0.17590
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
Year:	1992
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	2.52950
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	1993
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	2.52950
Last Updated By:	Not reported
Last Updated Date:	/ /
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported

RELIABLE LYONS CCDD (Continued) **S107745489**

CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2002
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PART
Tons per Year:	1.23318
Last Updated By:	EPA2110
Last Updated Date:	11/21/02
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2002
Emissions Type:	IEPA Estimated Emissions (tons per year)
Pollutant Code:	PM10
Tons per Year:	0.99450
Last Updated By:	EPA2110
Last Updated Date:	11/21/02
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2003
Emissions Type:	Facility Reported
Pollutant Code:	PART
Tons per Year:	0.64000
Last Updated By:	EPA2499
Last Updated Date:	03/19/04
Chemical Name:	PARTICULATE MATTER
AIRS Code:	PT
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM
NEI Pollutants:	PM-PRI
Year:	2003
Emissions Type:	Facility Reported
Pollutant Code:	PM10
Tons per Year:	0.30000
Last Updated By:	EPA2499
Last Updated Date:	03/19/04
Chemical Name:	PARTICULATE MATTER < 10 MICRONS
AIRS Code:	PM10
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	PM10
NEI Pollutants:	PM10-PRI
Year:	2003
Emissions Type:	Facility Reported
Pollutant Code:	VOM
Tons per Year:	0
Last Updated By:	EPA2499
Last Updated Date:	03/19/04

RELIABLE LYONS CCDD (Continued) **S107745489**

Chemical Name:	VOLATILE ORGANIC MATERIAL
AIRS Code:	VOC
CAS Short:	Not reported
CAS Long:	Not reported
Rapids Code:	VOC
NEI Pollutants:	VOC
ID Number:	AAW
AIRS ID:	0594
County FIPS:	031
City Township FIPS:	171
DUN BradStreet Number:	Not reported
FEIN Number:	Not reported
FINDS Number:	ILD043908888
Start Operation Date:	10/1/1972
Ceased Operation Date:	12/15/2005
No Employees:	Not reported
Products:	Not reported
ERMS:	N
Fill ID Number:	031171AAW
Last Updated By:	EPA4107
Last Updated ID:	2/21/2006 10:31:01 AM
Aces Site ID:	170000025540
Aces Interest:	PERMIT
SIC Code:	1422
SIC Code 2:	Not reported
SIC Code 3:	Not reported
SIC Code 4:	Not reported
SIC Code 5:	Not reported
SIC Code 6:	Not reported
NAICS 1:	212312
NAICS 2:	Not reported
NAICS 3:	Not reported
NAICS 4:	Not reported
NAICS 5:	Not reported
NAICS 6:	Not reported
Permits ID Number:	10408
Number:	83040123
Operation Name:	AGGREGATE PROCESSING PLANT
Location:	FILE ROOM 1
Location Date:	5/9/2000
Expiration Date:	Not reported
Status Date:	12/20/2005 2:29:05 PM
Permit Type:	LIFETIME
Permit Status:	WITHDRAWN
Date Received:	12/20/2005 2:29:05 PM
Analyst:	SPB
Confidential:	N

A3 **IN Spills** **S108089349**
Target Property **4226 LAWNDALE AVE** **N/A**
LYONS, IL 60534

Site 3 of 8 in cluster A

Actual: 617 ft.

SPILL:

Facility ID:	200604128
Incident Date:	/ /
Report Date:	/ /
Material:	HYDRAULIC OIL
Spill Source:	Industrial
Recovered Amount:	Not reported
Recovered Units:	Not reported
Spilled Amount:	1
Spilled Units:	Gallons
Contained:	Not reported
Water Affected:	Not reported
Spill Type:	Other
Area Affected:	SHIP CANAL
Fish Killed:	Not reported
Wtr Supply Affctd:	No
Public Intake:	Not reported

A4 **D&S ENTERPRISES** **FINDS** **1008129090**
Target Property **4225 LAWNDALE AVE** **110018257526**
LYONS, IL 60534

Site 4 of 8 in cluster A

Actual: 617 ft.

FINDS:

Other Pertinent Environmental Activity Identified at Site

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

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A5 **MATERIAL SERVICE CORPORATION** **MLTS** **1006056420**
Target Property **4226 LAWNDALE AVENUE** **N/A**
LYONS, IL 60534

Site 5 of 8 in cluster A

Actual: 617 ft.

MLTS:

License Number:	12-15293-03
First License Date:	0
License Date:	05/02/1983
Lic. Expiration Date:	05/31/1988
Contact Name:	Not reported
Contact Phone:	Not reported
Institution Code:	15293
Primary Program:	Not reported
Department:	SAFETY DEPARTMENT
Building:	Not reported
States Allowing Use:	Not reported
License Use:	Not reported
Store Material Use:	No
Redistribution Use:	No

MATERIAL SERVICE CORPORATION (Continued) **1006056420**

Incinerate Use:	No
Burial Use:	No
Last Inspection Date:	03/1987
Next Inspection Date:	999999
Inspector Name:	Not reported
Status:	Not reported

A6 Target Property **MATERIAL SERVICE CORP YARD 18** **UST** **U001134116**
4226 S LAWNDALE AVE **N/A**
LYONS, IL 60534

Site 6 of 8 in cluster A

Actual: 617 ft.

UST:

Facility ID:	2020158
Tank Number:	1
Tank Capacity:	2000
Tank Substance:	Diesel Fuel
Tank Age:	21
Tank Last Used:	9/12/1997 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	2
Tank Capacity:	12000
Tank Substance:	Gasoline
Tank Age:	24
Tank Last Used:	9/12/1997 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

MATERIAL SERVICE CORP YARD 18 (Continued) **U001134116**

Facility ID:	2020158
Tank Number:	3
Tank Capacity:	3000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	4
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	5
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported

MATERIAL SERVICE CORP YARD 18 (Continued) **U001134116**

Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	6
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Tank Age:	47
Tank Last Used:	6/27/1995 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	7
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

MATERIAL SERVICE CORP YARD 18 (Continued) **U001134116**

Facility ID:	2020158
Tank Number:	8
Tank Capacity:	6000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	9
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Tank Age:	41
Tank Last Used:	7/30/1997 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	10
Tank Capacity:	400
Tank Substance:	New Oil
Tank Age:	45
Tank Last Used:	3/14/2002 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported

MATERIAL SERVICE CORP YARD 18 (Continued) **U001134116**

Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	11
Tank Capacity:	400
Tank Substance:	New Oil
Tank Age:	45
Tank Last Used:	3/14/2002 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2020158
Tank Number:	12
Tank Capacity:	6000
Tank Substance:	Gasoline
Tank Age:	41
Tank Last Used:	11/30/1978 00:00:00
Tank Status:	**Entered in error**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

A7 Target Property | **MATERIAL SERVICE CORP.** | **LUST** | **S104521380**
4226 SOUTH LAWNDALE AVE. (YARD 18-L | **N/A**
LYONS, IL 60534

Site 7 of 8 in cluster A

Actual: 617 ft.

LUST:

Incident Num:	951401
IL EPA Id:	0311715020
IEMA Date:	6/28/1995
PRP Name:	Material Service Corp.
PRP Contact:	Mark Strack
PRP Address:	4226 South Lawndale
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	3124437108
Product:	Gasoline
Project Manager:	Heaton
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-3312
Email:	Mike.Heaton@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	10/19/1995
45 Report Received:	3/26/1996
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/16/2006**
NFR Date Recorded:	5/11/2006

Incident Num:	971705
IL EPA Id:	0311715020
IEMA Date:	9/12/1997
PRP Name:	Material Service Corp.
PRP Contact:	Mark Strack
PRP Address:	4226 South Lawndale
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	3124437108
Product:	Unleaded Gas
Project Manager:	Heaton
Site Classification:	NFA
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-3312
Email:	Mike.Heaton@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	9/22/1997
45 Report Received:	11/3/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/27/2002**
NFR Date Recorded:	2/28/2003

Incident Num:	20021156
IL EPA Id:	0311715020
IEMA Date:	8/15/2002
PRP Name:	Material Service Corp.
PRP Contact:	Mary Ann Hunter
PRP Address:	4226 South Lawndale Ave.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	3124437128
Product:	Fuel Oil
Project Manager:	Heaton

MATERIAL SERVICE CORP. (Continued) **S104521380**

Site Classification:	High
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-3312
Email:	Mike.Heaton@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	11/21/2002
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**1/26/2007**
NFR Date Recorded:	2/23/2007

A8
Target
Property

MATERIAL SERVICE CORP YARD 18
4226 LAWNDALE AVE
LYONS, IL 60534

RCRA-SQG **1000215190**
FINDS **ILD043908888**

Site 8 of 8 in cluster A

Actual:
617 ft.

RCRAInfo:

Owner:	MATERIAL SERVICE CORP (312) 555-1212
EPA ID:	ILD043908888
Contact:	FRANK WERDERITSCH (312) 442-4601
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

9 SE < 1/8 252 ft. | **MATERIAL SERVICE CORP.**
4220 RIVERSIDE DR.
LYONS, IL 60534 | **LUST** | **S105743321**
N/A

Relative: Higher

Actual: 618 ft.

LUST:

Incident Num:	971392
IL EPA Id:	0311715020
IEMA Date:	7/31/1997
PRP Name:	Material Service Corp.
PRP Contact:	Mark Strack
PRP Address:	4226 South Lawndale
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	3124437108
Product:	Deisel
Project Manager:	Heaton
Site Classification:	High
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-3312
Email:	Mike.Heaton@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	9/5/1997
45 Report Received:	10/23/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**1/26/2007**
NFR Date Recorded:	2/23/2007

B10 East < 1/8 264 ft. | **LYONS ELECTRIC CO**
4225 LAWNDALE AVE
LYONS, IL 60534 | **UST** | **U000856679**
N/A

Site 1 of 3 in cluster B

Relative: Higher

Actual: 618 ft.

UST:

Facility ID:	2002427
Tank Number:	1
Tank Capacity:	2000
Tank Substance:	Gasoline
Tank Age:	24
Tank Last Used:	3/14/1994 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

B11
East
< 1/8
264 ft.

Relative:
Higher

Actual:
618 ft.

D&S ENTERPRISES
4225 LAWNDALE AVE.
LYONS, IL 60534

LUST **S103689523**
N/A

Site 2 of 3 in cluster B

LUST:

Incident Num:	940484
IL EPA Id:	0311715064
IEMA Date:	3/8/1994
PRP Name:	D&S Enterprises
PRP Contact:	Bill Darnstat
PRP Address:	P.O. Box 52
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Charles
Site Classification:	LOW
Section 57.5(g) Letter:	732
Project Manager Phone:	1-888-299-9533
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	3/25/1994
45 Report Received:	10/24/1994
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**6/30/1998**
NFR Date Recorded:	8/28/1998

B12
ENE
< 1/8
274 ft.

Relative:
Higher

Actual:
618 ft.

QUANTUM GRINDING CORP
4205 LAWNDALE AVE
LYONS, IL 60534

RCRA-SQG **1001195918**
FINDS **ILR000036004**

Site 3 of 3 in cluster B

RCRAInfo:

Owner:	QUANTUM GRINDING CORP (708) 442-8270
EPA ID:	ILR000036004
Contact:	WANDA FARR (708) 442-8270
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

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13 NE < 1/8 345 ft. | **QUARRY RELAMATION DISTRICT TIF #4**
4152 LAWNDALE AVENUE
LYONS, IL 60534 | **SRP** | **S108650000**
N/A

Relative: Lower

Actual: 615 ft.

SRP:

IL EPA Id:	0311715101
US EPA Id:	Not reported
Longitude:	-87.826909999999998
Latitude:	41.814970000000002
Contact Name:	Robert Bush
Contact Address:	140 South Dearborn Street
Contact Address2:	Not reported
Contact City,St,Zip:	Chicago, IL 60606-
Contact Phone:	(312) 782-7606
Date Enrolled:	08/03/07
Point Of Contact:	Kevin McCartney
Consultant Company:	Bradburne, Briller & Johnson, LLC
Consultant Address:	515 North State Street
Consultant Address2:	Suite 2200
Consultant City,St,Zip:	Chicago, IL 60610-
Consultant Phone:	(312) 644-8556
Proj Mgr Assigned:	Baldwin
Sec. 4 Letter Date:	/ /
NFR Recorded:	/ /
Active:	True
Total Acres:	15
No Further Remediation Letter Dt:	/ /
Remediation Applicant Co:	Village of Lyons
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Not reported
Remediation Applicant Company:	Not reported
Remediation Applicant Address:	Not reported
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Not reported
Illinois EPA:	Not reported
Site Name:	Not reported
NFR Letter:	Not reported
NFR Letter Date Recorded:	Not reported
Site Type:	Not reported
Comprehensive/Focused:	Not reported
Institutional Controls:	Not reported
Barrier:	Not reported
Worker Caution:	Not reported
Acres:	Not reported

C14 North < 1/8 531 ft. | **GOLDENTHAL ISAAC**
8219 OGDEN AV
CHICAGO, IL | **EDR Historical Auto Stations** | **1009117943**
N/A

Site 1 of 2 in cluster C

Relative: Lower

Actual: 614 ft.

EDR Historical Auto Stations:

Name:	GOLDENTHAL ISAAC
Year:	1923
Type:	AUTOMOBILE REPAIRING

C15
North
< 1/8
588 ft.

Relative:
Lower

Actual:
613 ft.

FORMER COUNTRY BUFFET RESTAURANT
8030 OGDEN AVENUE
LYONS, IL 60534

UST **U003805692**
N/A

Site 2 of 2 in cluster C

UST:

Facility ID:	2040739
Tank Number:	1
Tank Capacity:	550
Tank Substance:	Heating Oil
Tank Age:	Not reported
Tank Last Used:	12/30/1973 00:00:00
Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2040739
Tank Number:	2
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	Not reported
Tank Last Used:	12/30/1973 00:00:00
Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2040739
Tank Number:	3
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	Not reported
Tank Last Used:	12/30/1973 00:00:00

FORMER COUNTRY BUFFET RESTAURANT (Continued) **U003805692**

Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2040739
Tank Number:	4
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	Not reported
Tank Last Used:	12/30/1973 00:00:00
Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2040739
Tank Number:	5
Tank Capacity:	1000
Tank Substance:	Gasoline
Tank Age:	Not reported
Tank Last Used:	12/30/1973 00:00:00
Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported

FORMER COUNTRY BUFFET RESTAURANT (Continued) **U003805692**

Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

16
NNW
1/8-1/4
766 ft.

CAREFREE INVESTMENTS
8030 WEST OGDON AVE.
LYONS, IL 60534

LUST **S105226788**
N/A

Relative:
Lower

Actual:
606 ft.

LUST:

Incident Num:	20012059
IL EPA Id:	0311715085
IEMA Date:	12/17/2001
PRP Name:	Carefree Investments
PRP Contact:	Jim Jenks
PRP Address:	7941 Ogdon Ave.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	7084478036
Product:	Gasoline
Project Manager:	Davis
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 785-7492
Email:	Valerie.A.Davis@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	12/27/2001
45 Report Received:	3/18/2002
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**6/24/2003**
NFR Date Recorded:	7/14/2003

D17
WNW
1/8-1/4
1150 ft.

PALUMBO BROTHERS INC
8301 W OGDEN AVE
LYONS, IL 60534

RCRA-SQG **1000426058**
FINDS **ILD982628992**

Site 1 of 7 in cluster D

Relative:
Higher

Actual:
623 ft.

RCRAInfo:

Owner:	PALUMBO BROTHERS INC (312) 555-1212
EPA ID:	ILD982628992
Contact:	MARK TUBAY (312) 544-9440
Classification:	Small Quantity Generator
TSDF Activities:	Not reported

PALUMBO BROTHERS INC (Continued) **1000426058**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

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D18 **ORANGE CRUSH RECYCLE CO.** **LUST** **S104523925**
WNW **8301 WEST OGDEN AVE.** **N/A**
1/8-1/4 **LYONS, IL 60534**
1150 ft.

Site 2 of 7 in cluster D

Relative: Higher

Actual: 623 ft.

LUST:

Incident Num:	931154
IL EPA Id:	0311715030
IEMA Date:	5/5/1993
PRP Name:	Orange Crush Recycle
PRP Contact:	Mark Tubay
PRP Address:	323 Center St.
PRP City,St,Zip:	Hillside, IL 60162
PRP Phone:	Not reported
Product:	Deisel
Project Manager:	NOT ASSIGNED
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Project Manager Phone:	Not reported
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

D19 **PALUMBO BROS INC** **UST** **U002112886**
WNW **8301 W OGDEN AVE** **N/A**
1/8-1/4 **LYONS, IL 60534**
1150 ft.

Site 3 of 7 in cluster D

Relative: Higher

Actual: 623 ft.

UST:

Facility ID:	2033753
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Gasoline
Tank Age:	11

PALUMBO BROS INC (Continued) **U002112886**

Tank Last Used: 1/1/1993 00:00:00
Tank Status: Removed
Tank Red Tag: No
Facility ID 2: Not reported
Status: Not reported
1998 green decal: Not reported
Contact: Not reported
Phone #: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner Address 2: Not reported
Owner City,St,Zip: Not reported
Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

D20
WNW
1/8-1/4
1157 ft.

Relative:
Higher

Actual:
623 ft.

ASPAN FRAME & BODYWERKS **RCRA-SQG** **1007092810**
8044 OGDEN AVE **ILR000123711**
LYONS, IL 60534

Site 4 of 7 in cluster D

RCRAInfo:
Owner: JOSEPH STEPUL
EPA ID: ILR000123711

Contact: TIM ASPAN
(708) 447-5380

Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

D21
WNW
1/8-1/4
1168 ft.

Relative:
Higher

Actual:
623 ft.

MINUTEMAN **UST** **U003971733**
8050 W. OGDEN AVENUE **N/A**
LYONS, IL 60534

Site 5 of 7 in cluster D

UST:
Facility ID: 2002726
Tank Number: 1
Tank Capacity: 6000
Tank Substance: Gasoline
Tank Age: 29
Tank Last Used: Not reported
Tank Status: Abandoned in place
Tank Red Tag: No
Facility ID 2: Not reported
Status: Not reported
1998 green decal: Not reported
Contact: Not reported
Phone #: Not reported
Owner Name: Not reported
Owner Address: Not reported

MINUTEMAN (Continued) **U003971733**

Owner Address 2: Not reported
Owner City,St,Zip: Not reported
Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

Facility ID: 2002726
Tank Number: 2
Tank Capacity: 6000
Tank Substance: Gasoline
Tank Age: 29
Tank Last Used: Not reported
Tank Status: Abandoned in place
Tank Red Tag: No
Facility ID 2: Not reported
Status: Not reported
1998 green decal: Not reported
Contact: Not reported
Phone #: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner Address 2: Not reported
Owner City,St,Zip: Not reported
Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

Facility ID: 2002726
Tank Number: 3
Tank Capacity: 8000
Tank Substance: Gasoline
Tank Age: 29
Tank Last Used: Not reported
Tank Status: Abandoned in place
Tank Red Tag: No
Facility ID 2: Not reported
Status: Not reported
1998 green decal: Not reported
Contact: Not reported
Phone #: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner Address 2: Not reported
Owner City,St,Zip: Not reported
Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

Facility ID: 2002726
Tank Number: 4
Tank Capacity: 1000

MINUTEMAN (Continued) **U003971733**

Tank Substance:	Used Oil
Tank Age:	27
Tank Last Used:	Not reported
Tank Status:	**Abandoned in place**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002726
Tank Number:	5
Tank Capacity:	8000
Tank Substance:	Gasoline
Tank Age:	2
Tank Last Used:	Not reported
Tank Status:	**Currently in use**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002726
Tank Number:	6
Tank Capacity:	12000
Tank Substance:	Gasoline
Tank Age:	2
Tank Last Used:	Not reported
Tank Status:	**Currently in use**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported

MINUTEMAN (Continued) **U003971733**

Owner Address: Not reported
Owner Address 2: Not reported
Owner City,St,Zip: Not reported
Enforcement: Not reported
Fee Owed: Not reported
Permit Number: Not reported
Permit Expires: Not reported

D22
WNW
1/8-1/4
1168 ft.

Relative:
Higher

Actual:
623 ft.

NANCY'S GAS & FOOD MART **LUST** **S104526512**
8050 WEST OGDEN AVE. **LUST TRUST** **N/A**
LYONS, IL 60534

Site 6 of 7 in cluster D

LUST:

Incident Num:	20040462
IL EPA Id:	0311715023
IEMA Date:	4/6/2004
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Project Manager Phone:	Not reported
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	4/16/2004
45 Report Received:	5/24/2004
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

Incident Num:	903267
IL EPA Id:	0311715023
IEMA Date:	11/5/1990
PRP Name:	Firestone Value Tire & Auto
PRP Contact:	Ray Darson
PRP Address:	8050 West Ogden Ave.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	NOT ASSIGNED
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Project Manager Phone:	Not reported
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

NANCY'S GAS & FOOD MART (Continued) **S104526512**

LUST TRUST:

Facility Name:	**Nancy's Gas & Food Mart**
Queue Date:	**5/30/2006**
Incident Number:	**20040462-45964**
Amount To Be Paid:	**$25,984.66**
Running Total:	**$9,681,028.22**

D23
WNW
1/8-1/4
1168 ft.

Relative:
Higher

Actual:
623 ft.

MINUTEMAN SERVICE STATION **UST** **U003668211**
8050 W OGDEN AVE **N/A**
LYONS, IL 60534

Site 7 of 7 in cluster D

UST:

Facility ID:	2037156
Tank Number:	1
Tank Capacity:	1000
Tank Substance:	Not reported
Tank Age:	96
Tank Last Used:	12/1/1973 00:00:00
Tank Status:	**Exempt from registration**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

E24
WNW
1/8-1/4
1299 ft.

Relative:
Higher

Actual:
624 ft.

DES PLAINES VALLEY MOSQUITO ABATEMENT **RCRA-SQG** **1000347849**
8130 OGDEN AVENUE **FINDS** **ILD092423250**
LYONS, IL 60534

Site 1 of 4 in cluster E

DES PLAINES VALLEY MOSQUITO ABATEMENT (Continued) **1000347849**

RCRAInfo:
Owner: DES PLAINES DIST
(312) 555-1212
EPA ID: ILD092423250

Contact: PAUL GEERY
(312) 447-1765

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

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25 South 1/8-1/4 1302 ft. | **CONDUCTORS UNLIMITED** | **RCRA-SQG** | **1000462807**
4400 S LAWNDALE | **FINDS** | **ILD984809681**
LYONS, IL 60534

Relative: Higher

Actual: 617 ft.

RCRAInfo:
Owner: CORP
EPA ID: ILD984809681

Contact: WARREN KREITZMAN
(708) 447-2666

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

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RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

E26
WNW
1/8-1/4
1307 ft.

Relative:
Higher

Actual:
622 ft.

DES PLAINES VALLEY MOSQUITO
8130 OGDEN AVE PO BOX 31
LYONS, IL 60534

UST **U000856675**
N/A

Site 2 of 4 in cluster E

UST:

Facility ID:	2002280
Tank Number:	1
Tank Capacity:	4000
Tank Substance:	Gasoline
Tank Age:	17
Tank Last Used:	Not reported
Tank Status:	**Currently in use**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	2
Tank Capacity:	4000
Tank Substance:	Gasoline
Tank Age:	17
Tank Last Used:	Not reported
Tank Status:	**Currently in use**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	3
Tank Capacity:	1500
Tank Substance:	Fuel Oil
Tank Age:	34
Tank Last Used:	Not reported

DES PLAINES VALLEY MOSQUITO (Continued) **U000856675**

Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	4
Tank Capacity:	2500
Tank Substance:	Not reported
Tank Age:	17
Tank Last Used:	Not reported
Tank Status:	**Currently in use**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	5
Tank Capacity:	1000
Tank Substance:	Used Oil
Tank Age:	31
Tank Last Used:	Not reported
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported

DES PLAINES VALLEY MOSQUITO (Continued) **U000856675**

Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	6
Tank Capacity:	1500
Tank Substance:	Gasoline
Tank Age:	32
Tank Last Used:	3/1/1987 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

Facility ID:	2002280
Tank Number:	7
Tank Capacity:	2000
Tank Substance:	Gasoline
Tank Age:	28
Tank Last Used:	3/1/1987 00:00:00
Tank Status:	**Removed**
Tank Red Tag:	No
Facility ID 2:	Not reported
Status:	**Not reported**
1998 green decal:	Not reported
Contact:	Not reported
Phone #:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Enforcement:	Not reported
Fee Owed:	Not reported
Permit Number:	Not reported
Permit Expires:	Not reported

E27
WNW
1/8-1/4
1308 ft.

DOUGLAS RUG CARPET CLEANERS
8405 OGDEN AV
CHICAGO, IL

EDR Historical Cleaners **1009210939**
N/A

Site 3 of 4 in cluster E

Relative:
Higher

Actual:
624 ft.

EDR Historical Cleaners:

Name:	DOUGLAS RUG CARPET CLEANERS
Year:	1923
Type:	CARPET CLEANING WORKS

E28
WNW
1/4-1/2
1341 ft.

B & M SERVICE
8212 WEST OGDEN AVE.
LYONS, IL 60534

LUST **S104529336**
N/A

Site 4 of 4 in cluster E

Relative:
Higher

Actual:
623 ft.

LUST:

Incident Num:	983168
IL EPA Id:	0311715079
IEMA Date:	12/28/1998
PRP Name:	B & M Service
PRP Contact:	Bill Rissky
PRP Address:	8212 West Ogden Ave.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	7084479699
Product:	Fuel Oil
Project Manager:	NOT ASSIGNED
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	Not reported
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

29
WNW
1/4-1/2
1745 ft.

LYON AROUND LLC
8499 WEST OGDEN AVENUE
LYONS, IL 60534

LUST **S106984524**
N/A

Relative:
Higher

Actual:
617 ft.

LUST:

Incident Num:	20050913
IL EPA Id:	0311715095
IEMA Date:	7/1/2005
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Hawbaker
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Project Manager Phone:	(217) 782-5713

LYON AROUND LLC (Continued) **S106984524**

Email:	Carol.Hawbaker@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	7/20/2005
45 Report Received:	8/8/2005
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/8/2006**
NFR Date Recorded:	Not reported

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30 ESE 1/4-1/2 1855 ft. **LYONS SERVICE CTR.** **LUST** **S101275147**
4323 JOLIET RD. **N/A**
LYONS, IL 60534

Relative: Higher

Actual: 621 ft.

LUST:

Incident Num:	942075
IL EPA Id:	0311715065
IEMA Date:	9/12/1994
PRP Name:	Lyons Service Ctr.
PRP Contact:	Richard Goyette
PRP Address:	4323 Joliet Rd.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Charles
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	1-888-299-9533
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	5/27/1997
45 Report Received:	8/7/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**4/9/1998**
NFR Date Recorded:	6/22/1998

F31 West 1/4-1/2 1890 ft. **SHELL OIL CO.** **LUST** **S104190067**
8451WEST OGDEN AVE. / 1ST AVE. **N/A**
LYONS, IL 60534

Site 1 of 2 in cluster F

Relative: Equal

Actual: 616 ft.

LUST:

Incident Num:	962116
IL EPA Id:	0311715072
IEMA Date:	11/13/1996
PRP Name:	Equilon Enterprises LLC
PRP Contact:	John Robbins
PRP Address:	603 Diehl Rd., Suite 103
PRP City,St,Zip:	Naperville, IL 60563
PRP Phone:	6302764206
Product:	Uset Oil
Project Manager:	Malcom
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-9140
Email:	James.Malcom@illinois.gov

SHELL OIL CO. (Continued) **S104190067**

Non LUST Determination Letter:	Not reported
20 Report Received:	12/2/1996
45 Report Received:	12/30/1996
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/4/2005**
NFR Date Recorded:	4/18/2005

F32
West
1/4-1/2
1890 ft.

Relative:
Equal

Actual:
616 ft.

SHELL OIL **LUST** **S104190066**
8451 WEST OGDEN AVE. / 1ST AVE. **N/A**
LYONS, IL 60534

Site 2 of 2 in cluster F

LUST:

Incident Num:	971854
IL EPA Id:	0311715072
IEMA Date:	9/30/1997
PRP Name:	Equilon Enterprises LLC
PRP Contact:	John Robbins
PRP Address:	603 Diehl Rd., Suite 103
PRP City,St,Zip:	Naperville, IL 60563
PRP Phone:	6302764206
Product:	Gasoline
Project Manager:	Malcom
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 524-9140
Email:	James.Malcom@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	10/16/1997
45 Report Received:	11/12/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/4/2005**
NFR Date Recorded:	4/18/2005

33
NNE
1/4-1/2
1938 ft.

Relative:
Lower

Actual:
611 ft.

ASPAN FRAME & BODY WERKS **SRP** **S108187513**
8044 OGDEN AVENUE **N/A**
LYONS, IL 60534

SRP:

IL EPA Id:	0311715090
US EPA Id:	Not reported
Longitude:	-87.822950000000006
Latitude:	41.819369999999999
Contact Name:	Frank Porro
Contact Address:	8044 Ogden Avenue
Contact Address2:	Not reported
Contact City,St,Zip:	Lyons, IL 60534-
Contact Phone:	(708) 447-0887
Date Enrolled:	10/26/06
Point Of Contact:	Joe C. Zhou
Consultant Company:	Hydrodynamics Consultants, Inc.
Consultant Address:	1809 Ogden Avenue
Consultant Address2:	Not reported
Consultant City,St,Zip:	Lisle, IL 60523-

ASPAN FRAME & BODY WERKS (Continued) **S108187513**

Consultant Phone:	(630) 724-0098
Proj Mgr Assigned:	Mehra
Sec. 4 Letter Date:	/ /
NFR Recorded:	/ /
Active:	True
Total Acres:	0.27500000000000002
No Further Remediation Letter Dt:	/ /
Remediation Applicant Co:	All-Star Automotive Services, Inc.
Remediation Applicant Title:	Vice President
Remediation Applicant Name:	Not reported
Remediation Applicant Company:	Not reported
Remediation Applicant Address:	Not reported
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Not reported
Illinois EPA:	Not reported
Site Name:	Not reported
NFR Letter:	Not reported
NFR Letter Date Recorded:	Not reported
Site Type:	Not reported
Comprehensive/Focused:	Not reported
Institutional Controls:	Not reported
Barrier:	Not reported
Worker Caution:	Not reported
Acres:	Not reported

G34 **ZEPHYER SERVICE** **LUST** **S103292809**
West **PLAINFIELD / 1ST AVE.** **N/A**
1/4-1/2 **LYONS, IL 60534**
1970 ft.

Site 1 of 2 in cluster G

Relative:
Lower

Actual:
615 ft.

LUST:

Incident Num:	892314
IL EPA Id:	0311715041
IEMA Date:	11/13/1989
PRP Name:	Robert Lawson
PRP Contact:	Not reported
PRP Address:	3827 South Wenonah
PRP City,St,Zip:	Berlin, IL 60402
PRP Phone:	Not reported
Product:	Unleaded Gas
Project Manager:	Putrich
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Project Manager Phone:	(217) 524-4827
Email:	Steve.Putrich@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	2/29/1992
45 Report Received:	2/29/1992
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/9/1990**
NFR Date Recorded:	Not reported

G35 West 1/4-1/2 1970 ft.

Relative: Lower

Actual: 615 ft.

ZEPHYR SERVICE STATION
4200 SOUTH 1ST AVENUE
LYONS, IL 60534

SRP
Inst Control
ENG CONTROLS

S106779095
N/A

Site 2 of 2 in cluster G

SRP:

IL EPA Id:	0311715041
US EPA Id:	Not reported
Longitude:	-87.834360000000004
Latitude:	41.814390000000003
Contact Name:	Rick Heidner
Contact Address:	399 Wall Street
Contact Address2:	Unit H
Contact City,St,Zip:	Glendale Heights, IL 60139-
Contact Phone:	(630) 894-0099
Date Enrolled:	01/04/05
Point Of Contact:	Dakota Prentice
Consultant Company:	Pioneer Engineering & Environmental Services, Inc.
Consultant Address:	700 North Sacramento Boulevard
Consultant Address2:	Suite 101
Consultant City,St,Zip:	Chicago, IL 60612-
Consultant Phone:	(312) 587-1021
Proj Mgr Assigned:	Landers
Sec. 4 Letter Date:	/ /
NFR Recorded:	08/29/05
Active:	False
Total Acres:	0.26000000000000001
No Further Remediation Letter Dt:	08/18/05
Remediation Applicant Co:	Heidner Properties, Inc.
Remediation Applicant Title:	President
Remediation Applicant Name:	Mr. Eric Grabowski
Remediation Applicant Company:	Heidner Properties, Inc.
Remediation Applicant Address:	399 Wall Street
Remediation Applicant Address 2:	Unit H
Remediation Applicant City,St,Zip:	Glendale Heights, IL 60139-
Illinois EPA:	0311715041
Site Name:	Zephyr Service Station
NFR Letter:	08/18/05
NFR Letter Date Recorded:	08/29/05
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Asphalt/concrete barrier
Worker Caution:	False
Acres:	0.25999

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0311715041
Name Site:	Zephyr Service Station
NFR Letter:	08/18/05
Date NFR Recorded:	08/29/05
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Eric Grabowski
RA Company:	Heidner Properties, Inc.
RA Address:	399 Wall Street

ZEPHYR SERVICE STATION (Continued) **S106779095**

RA Secondary Address:	Unit H
RA City,St,Zip:	Glendale Heights, IL 60139-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt/concrete barrier
Worker Caution:	False
Acres:	0.25999

ENGINEERING CONTROLS:

Name Site:	Zephyr Service Station
Illinois Epa Id:	0311715041
NFR Letter:	08/18/05
Date NFR Recorded:	08/29/05
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Eric Grabowski
RA Company:	Heidner Properties, Inc.
RA Address:	399 Wall Street
RA Secondary Address:	Unit H
RA City,St,Zip:	Glendale Heights, IL 60139-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt/concrete barrier
Worker Caution:	False
Acres:	0.25999

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36 **TOWER FUNERAL HOME** **LUST** **S104522510**
NE **4007-11 SOUTH JOLIET AVE.** **N/A**
1/4-1/2 **LYONS, IL 60534**
2028 ft.

Relative:
Lower

Actual:
615 ft.

LUST:

Incident Num:	951265
IL EPA Id:	0311715069
IEMA Date:	6/14/1995
PRP Name:	Tower Funeral Home
PRP Contact:	Don Edwards
PRP Address:	4007 South Joliet Rd.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	NOT ASSIGNED
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	Not reported
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

37 WNW 1/4-1/2 2037 ft. | **AMOCO OIL CO. #18595**
8501 WEST OGDEN AVE.
LYONS, IL 60534 | **LUST** | **S104525747**
N/A

Relative: Lower

Actual: 615 ft.

LUST:

Incident Num:	912250
IL EPA Id:	0311715046
IEMA Date:	8/12/1991
PRP Name:	Amoco Oil Co.
PRP Contact:	Lyle Bruce
PRP Address:	28100 Torch Pkwy., 6-S
PRP City,St,Zip:	Warrenville, IL 60555
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Rahman
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Project Manager Phone:	(217) 782-9848
Email:	Mohammed.Rahman@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**4/22/2003**
NFR Date Recorded:	5/7/2003

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38 SW 1/4-1/2 2051 ft. | **AIR SAVERS, INC.**
8432 WEST 44TH PL.
LYONS, IL 60534 | **LUST** | **S104529666**
N/A

Relative: Higher

Actual: 623 ft.

LUST:

Incident Num:	991023
IL EPA Id:	0311715080
IEMA Date:	4/26/1999
PRP Name:	Air Savers, Inc.
PRP Contact:	Mark Olson
PRP Address:	8432 West 44th Pl.
PRP City,St,Zip:	Lyons, IL 60534-1744
PRP Phone:	7084474646
Product:	Other Petro
Project Manager:	Rahman
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 782-9848
Email:	Mohammed.Rahman@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	8/9/1999
45 Report Received:	8/9/1999
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/9/1999**
NFR Date Recorded:	7/17/2000

39 WNW 1/4-1/2 2189 ft. | **SHELL OIL PRODUCTS US**
8451WEST OGDEN AVENUE
LYONS, IL 60534 | **LUST** | **S106656015**
N/A

Relative: Lower

Actual: 615 ft.

LUST:

Incident Num:	20041448
IL EPA Id:	0311715072
IEMA Date:	10/19/2004
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Product:	Unleaded Gas
Project Manager:	Malcom
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Project Manager Phone:	(217) 524-9140
Email:	James.Malcom@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**2/4/2005**
NFR Date Recorded:	4/18/2005

H40 WNW 1/4-1/2 2368 ft. | **TZOUMAS, GUS**
8542 WEST OGDEN AVE.
LYONS, IL 60402 | **LUST** | **S105620771**
N/A

Site 1 of 5 in cluster H

Relative: Equal

Actual: 616 ft.

LUST:

Incident Num:	20021309
IL EPA Id:	0311715088
IEMA Date:	9/12/2002
PRP Name:	Gus Tzoumas
PRP Contact:	Not reported
PRP Address:	8542 West Ogden Ave.
PRP City,St,Zip:	Lyons, IL 60402
PRP Phone:	7087950800
Product:	Gasoline
Project Manager:	Chappel
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Project Manager Phone:	(217) 785-3913
Email:	Harry.A.Chappel@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	12/10/2002
45 Report Received:	Not reported
Section 57.5(g) Letter:	10/8/2002
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

41 SW 1/4-1/2 2376 ft. | **FREEWAY FORD INC**
8445 W 45TH
LYONS, IL 60534 | **RCRA-SQG**
FINDS
LUST | **1000225141**
ILD056652837

Relative: Higher

Actual: 620 ft.

RCRAInfo:

Owner: FORD JOHN
(312) 555-1212

EPA ID: ILD056652837

Contact: CLYDE KESSEL
(312) 442-9000

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LUST:

Incident Num:	913107
IL EPA Id:	0311715028
IEMA Date:	10/30/1991
PRP Name:	Freeway Ford Truck Sales Inc.
PRP Contact:	Robert Rachlewicz
PRP Address:	8445 West 45th St.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Uset Oil
Project Manager:	Friedel
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Project Manager Phone:	(217) 785-5736
Email:	Melinda.Friedel@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	1/23/1992
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**4/24/2006**
NFR Date Recorded:	3/29/2007

H42
WNW
1/4-1/2
2421 ft.

Relative:
Equal

Actual:
616 ft.

AUTO ZONE
1 BLDG. WEST OF 8542 OGDEN AVE.
LYONS, IL 60534

LUST **S104872238**
N/A

Site 2 of 5 in cluster H

LUST:

Incident Num:	20010091
IL EPA Id:	0311715083
IEMA Date:	1/18/2001
PRP Name:	Auto Zone
PRP Contact:	Jim Kilburn
PRP Address:	60 Madison Ave.
PRP City,St,Zip:	Memphis, TN 38103
PRP Phone:	9014958743
Product:	Other Petro
Project Manager:	Barrett
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 782-4869
Email:	John.D.Barrett@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	2/7/2001
45 Report Received:	5/9/2001
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**6/7/2001**
NFR Date Recorded:	11/1/2001

H43
WNW
1/4-1/2
2421 ft.

Relative:
Equal

Actual:
616 ft.

BANK OF LYONS
8553 OGDEN AVE.
LYONS, IL 60534

LUST **S103689518**
N/A

Site 3 of 5 in cluster H

LUST:

Incident Num:	971545
IL EPA Id:	0311715076
IEMA Date:	8/20/1997
PRP Name:	Bank of Lyons
PRP Contact:	Thomas Prothero
PRP Address:	8601 West Ogden Ave.
PRP City,St,Zip:	Lyons, IL 60534
PRP Phone:	Not reported
Product:	Fuel Oil
Project Manager:	Charles
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	1-888-299-9533
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

H44
WNW
1/4-1/2
2421 ft.

Relative:
Equal

Actual:
616 ft.

BANK OF LYONS
8553 WEST OGDEN AVE.
LYONS, IL 60534

LUST **S104521461**
N/A

Site 4 of 5 in cluster H

LUST:

Incident Num:	971070
IL EPA Id:	0311715076
IEMA Date:	6/16/1997
PRP Name:	Bank of Lyons
PRP Contact:	Thomas Prothero
PRP Address:	P.O. Box 737
PRP City,St,Zip:	Warrenville, IL 60555
PRP Phone:	Not reported
Product:	Gasoline
Project Manager:	Charles
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	1-888-299-9533
Email:	Not reported
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

H45
WNW
1/4-1/2
2443 ft.

Relative:
Higher

Actual:
617 ft.

AUTO ZONE
8556 WEST OGDEN AVE.
LYONS, IL 60534

LUST **S104872260**
N/A

Site 5 of 5 in cluster H

LUST:

Incident Num:	20010182
IL EPA Id:	0311715083
IEMA Date:	1/31/2001
PRP Name:	Auto Zone
PRP Contact:	Jim Kilburn
PRP Address:	60 Madison Ave.
PRP City,St,Zip:	Memphis, TN 38103
PRP Phone:	9014958743
Product:	Other Petro
Project Manager:	Barrett
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Project Manager Phone:	(217) 782-4869
Email:	John.D.Barrett@illinois.gov
Non LUST Determination Letter:	Not reported
20 Report Received:	2/15/2001
45 Report Received:	5/9/2001
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**6/7/2001**
NFR Date Recorded:	11/1/2001

46	**AKZO NOBEL CHEMICALS INC**	**FINDS**	**1000324610**
South	**8201 W 47TH ST**	**RCRA-LQG**	**60525KZCHM82**
1/2-1	**MC COOK, IL 60525**	**TRIS**	
3240 ft.		**CORRACTS**	

Relative:
Lower

Actual:
615 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and its Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

AKZO NOBEL CHEMICALS INC (Continued) **1000324610**

PCS (Permit Compliance System) is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

RCRAInfo Corrective Action Summary:

Event: Stabilization Measures Evaluation,This facility is not amenable to stabilization activity at the present time for reasons other than 1) it appears to be technically infeasible or inappropriate (NF) or 2) there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.
Event Date: 03/12/1992

Event: RFA Completed
Event Date: 11/27/1991

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 09/27/1991

RCRAInfo:

Owner: ARMAK CO
(312) 786-0400
EPA ID: ILD057833642

Contact: KEITH COSBY
(708) 447-7990

Classification: Large Quantity Generator
TSDF Activities: Not reported

BIENNIAL REPORTS:

Last Biennial Reporting Year: 2005

Waste	Quantity (Lbs)	Waste	Quantity (Lbs)
D001	236789.00	D002	482.00
F003	4798.00	F005	4398.00

Violation Status: Violations exist

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/26/1986
Actual Date Achieved Compliance: 01/14/1987

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 12/17/1986
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 04/04/1985
Actual Date Achieved Compliance: 06/11/1985

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 04/18/1985
Penalty Type: Not reported

There are 2 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance

AKZO NOBEL CHEMICALS INC (Continued) **1000324610**

Non-Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19870114
Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19850611

CORRACTS:

EPA ID: ILD057833642
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 03/12/1992
Action: CA225NR - Stabilization Measures Evaluation, This facility is, not amenable to stabilization activity at the, present time for reasons other than (1) it appears to be technically, infeasible or inappropriate (NF) or (2) there is a lack of technical, information (IN). Reasons for this conclusion may be the status of, closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other, administrative considerations
NAICS Code(s): 325613
Surface Active Agent Manufacturing

EPA ID: ILD057833642
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 09/27/1991
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): 325613
Surface Active Agent Manufacturing

EPA ID: ILD057833642
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 11/27/1991
Action: CA050 - RFA Completed
NAICS Code(s): 325613
Surface Active Agent Manufacturing

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47 SSW 1/2-1 3398 ft. | **AKZO CHEMIE AMERICA** | **RCRA-LQG** | **1000147090**
8401 W 47TH ST | **CORRACTS** | **ILD000805705**
MC COOK, IL 60525 | **CERC-NFRAP**

Relative: Lower

Actual: 614 ft.

RCRAInfo Corrective Action Summary:
Event: Stabilization Measures Evaluation,This facility is not amenable to stabilization activity at the present time for reasons other than 1) it appears to be technically infeasible or inappropriate (NF) or 2) there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.
Event Date: 02/24/1992

AKZO CHEMIE AMERICA (Continued) **1000147090**

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 09/27/1991

Event: RFA Completed
Event Date: 04/06/1990

Event: RFA Determination Of Need For An RFI, RFI is Necessary;
Event Date: 04/06/1990

RCRAInfo:
Owner: ARMAK COMPANY
(312) 786-0400
EPA ID: ILD000805705

Contact: EDWIN BISINGER
(312) 442-7100

Classification: Large Quantity Generator
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 724.251
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 10/18/1991
Actual Date Achieved Compliance: 02/10/1992

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 10/31/1991
Penalty Type: Not reported

Enforcement Action: VIOLATION NOTICE (VN)
Enforcement Action Date: 12/26/1991
Penalty Type: Not reported

There are 1 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19920210

CORRACTS:

EPA ID: ILD000805705
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 02/24/1992
Action: CA225NR - Stabilization Measures Evaluation, This facility is, not amenable to stabilization activity at the, present time for reasons other than (1) it appears to be technically, infeasible or inappropriate (NF) or (2) there is a lack of technical, information (IN). Reasons for this conclusion may be the status of, closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other, administrative considerations
NAICS Code(s): Not reported

EPA ID: ILD000805705
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1990

AKZO CHEMIE AMERICA (Continued) **1000147090**

Action: CA050 - RFA Completed
NAICS Code(s): Not reported

EPA ID: ILD000805705
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1990
Action: CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s): Not reported

EPA ID: ILD000805705
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 09/27/1991
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): Not reported

CERC-NFRAP:
Site ID: 0500084
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: ARMAK INC
Alias Address: Not reported
IL
Alias Name: ARMAK CO RESEARCH LAB
Alias Address: Not reported
COOK, IL
Alias Name: ARMAK CO RESEARCH LAB
Alias Address: 8401 W 47TH ST
MCCOOK, IL 60525
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 12/01/1979
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 01/01/1984
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 03/01/1991
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 03/01/1991
Priority Level: Not reported

48 SE 1/2-1 4406 ft.

TARACORP IND MCCOOK PLT
7753 WEST 47TH STREET
MC COOK, IL 60525

RCRA-SQG
FINDS
RAATS
CORRACTS
CERC-NFRAP

1000145012
ILD098983208

Relative: Lower

Actual: 598 ft.

RCRAInfo Corrective Action Summary:

Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.
Event Date: 09/27/1991

Event: RFA Completed
Event Date: 03/31/1987

Event: RFA Determination Of Need For An RFI, RFI is Necessary;
Event Date: 03/31/1987

RCRAInfo:

Owner: TARACORP INC
(312) 555-1212
EPA ID: ILD098983208

Contact: GEORGE WEBB
(618) 451-4483

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CORRACTS:

EPA ID: ILD098983208
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 03/31/1987
Action: CA050 - RFA Completed
NAICS Code(s): 331492
Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)

EPA ID: ILD098983208
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 03/31/1987
Action: CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s): 331492
Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)

TARACORP IND MCCOOK PLT (Continued) **1000145012**

EPA ID: ILD098983208
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 09/27/1991
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 331492
Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)

CERC-NFRAP:
Site ID: 0500520
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: MCCOOK PLT
Alias Address: Not reported
IL
Alias Name: TARACORP IND MCCOOK PLT
Alias Address: Not reported
COOK, IL
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 09/01/1984
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 09/23/1986
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 09/29/1995
Priority Level: Not reported

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49 **MORECO** **SHWS** **S103292827**
SE **7601 WEST 47TH STREET** **LUST** **N/A**
1/2-1 **MCCOOK, IL 60525**
5231 ft.

Relative:
Lower

Actual:
597 ft.

SHWS:
Facility ID: 0311740002
Facility Type: Drums - Waste-oil recycler
Region: Des Plaines
Current Program: SRP
SSU Status: Transferred

MORECO (Continued) **S103292827**

US Epaid: ILD000810291
Year Completed: Not reported
Year Entered: Not reported
Site Size: 6
FOS Personal: VanOrden
Community Relations: McGinnis

LUST:
Incident Num: 911423
IL EPA Id: 0311740002
IEMA Date: 5/29/1991
PRP Name: Moreco Energy
PRP Contact: Frank Lappin
PRP Address: 7601 West 47th St.
PRP City,St,Zip: McCook, IL 60525
PRP Phone: Not reported
Product: Gasoline
Project Manager: NOT ASSIGNED
Site Classification: Not reported
Section 57.5(g) Letter: 731
Project Manager Phone: Not reported
Email: Not reported
Non LUST Determination Letter: Not reported
20 Report Received: Not reported
45 Report Received: Not reported
Section 57.5(g) Letter: Not reported
NFA/NFR Letter: Not reported
NFR Date Recorded: Not reported

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LYONS	U003909497	FORMER SER STATION	NW CORNER-HARLEM & RT 66	60534	UST
LYONS	1009404200	RELIABLE MATERIALS LYONS LLC	4401 S FIRST AVE	60534	FINDS
LYONS	1003869973	AMERICAN GRADING COMPANY	LAWNDALE & ROUTE 66	60534	CERC-NFRAP
LYONS	U003972145	AMOCO	8501 W OGDEN	60534	UST
LYONS	U003995184	LYON AROUND	8499 W OGDEN	60534	UST
RIVERSIDE	1008125713	RIVERSIDE, VILLAGE OF	39TH & SHAKESPEAR	60546	FINDS, SWF/LF

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
D002	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
F003	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F005	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/18/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/09/2007
Date Data Arrived at EDR: 09/05/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 43

Source: EPA
Telephone: N/A
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/23/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 70

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/19/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/21/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 37

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/26/2007
Date Data Arrived at EDR: 08/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/13/2006
Date Data Arrived at EDR: 06/28/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 56

Source: EPA
Telephone: 312-886-6186
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 01/24/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 47

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/19/2007
Next Scheduled EDR Contact: 01/21/2008
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/02/2007
Date Data Arrived at EDR: 07/18/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 62

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 08/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 41

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 07/09/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 07/16/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 44

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/21/2007
Next Scheduled EDR Contact: 01/21/2008
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/08/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 57

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/08/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 82

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/19/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/18/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/06/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 60

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 07/06/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 60

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Annually

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 08/14/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 43

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/27/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 07/25/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 72

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 10/02/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 08/01/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 04/12/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/24/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 56

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/09/2007
Date Data Arrived at EDR: 06/28/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/26/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/19/2007
Date Data Arrived at EDR: 07/25/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 55

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Biennially

USGS WATER WELLS: National Water Information System (NWIS)

This database consists of well records in the United States. Available site descriptive information includes well location information (latitude and longitude, well depth, site use, water use, and aquifer).

Date of Government Version: 03/25/2005
Date Data Arrived at EDR: 03/25/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: USGS
Telephone: N/A
Last EDR Contact: 03/25/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PWS: Public Water System Data

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 02/24/2000
Date Data Arrived at EDR: 04/27/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA
Telephone: N/A
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: N/A

STATE AND LOCAL RECORDS

SHWS: State Oversight List

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 09/05/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 15

Source: Illinois Environmental Protection Agency
Telephone: 217-524-4863
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

CAT: Category List

Sites on this list are: Notice of Response Action, NPL, Pre/proposed NPL, Completed Remedial Action, Site Remediation Program, Federal Facilities, and Cleanup Started and/or Completed Sites.

Date of Government Version: 06/01/1997
Date Data Arrived at EDR: 07/07/1997
Date Made Active in Reports: 08/14/1997
Number of Days to Update: 38

Source: Illinois EPA
Telephone: N/A
Last EDR Contact: 02/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWF/LF: Available Disposal for Solid Waste in Illinois - Solid Waste Landfills Subject to State Surcharge

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 10/01/2006
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 07/10/2007
Number of Days to Update: 39

Source: Illinois Environmental Protection Agency
Telephone: 217-785-8604
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

LF WMRC: Waste Management & Research Center Landfill Database

The Waste Management & Research Center Landfill Database includes records from the Department of Public Health, Department of Mines & Minerals, Illinois Environmental Protection Agency, State Geological Survey, Northeastern Illinois Planning Commission and Pollution Control Board.

Date of Government Version: 12/31/2001
Date Data Arrived at EDR: 10/06/2006
Date Made Active in Reports: 11/06/2006
Number of Days to Update: 31

Source: Department of Natural Resources
Telephone: 217-333-8940
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: No Update Planned

UIC: Underground Injection Wells

Injection wells are used for disposal of fluids by "injection" into the subsurface. The construction of injection wells range from very technical designs with twenty-four hour monitoring to simply a hole dug in the ground to control runoff. As a result of this diversity, the UIC Program divides injection wells into five different classes.

Date of Government Version: 08/14/2007
Date Data Arrived at EDR: 10/01/2007
Date Made Active in Reports: 10/23/2007
Number of Days to Update: 22

Source: Illinois EPA
Telephone: 217-782-9878
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

IL NIPC: Solid Waste Landfill Inventory

Solid Waste Landfill Inventory. NIPC is an inventory of active and inactive solid waste disposal sites, based on state, local government and historical archive data. Included are numerous sites which previously had never been identified largely because there was no obligation to register such sites prior to 1971.

Date of Government Version: 08/01/1988
Date Data Arrived at EDR: 08/01/1994
Date Made Active in Reports: 08/12/1994
Number of Days to Update: 11

Source: Northeastern Illinois Planning Commission
Telephone: 312-454-0400
Last EDR Contact: 05/23/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 08/21/2007
Date Data Arrived at EDR: 08/22/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 29

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6762
Last EDR Contact: 08/22/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

LUST TRUST: Underground Storage Tank Fund Payment Prioirty List

In case sufficient funds are not available in the Underground Storage Tank Fund, requests for payment are entered on the Payment Priority List by "queue date" order. As required by the Environmental Protection Act, the queue date is the date that a complete request for partial or final payment was received by the Agency. The queue date is "officially" confirmed at the end of the payment review process when a Final Decision Letter is sent to the site owner.

Date of Government Version: 08/01/2007
Date Data Arrived at EDR: 09/19/2007
Date Made Active in Reports: 10/18/2007
Number of Days to Update: 29

Source: Illinois EPA
Telephone: 217-782-6762
Last EDR Contact: 08/22/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

UST: Underground Storage Tank Facility List

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/25/2007
Date Data Arrived at EDR: 07/02/2007
Date Made Active in Reports: 08/02/2007
Number of Days to Update: 31

Source: Illinois State Fire Marshal
Telephone: 217-785-0969
Last EDR Contact: 10/19/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

SPILLS: State spills

A listing of incidents reported to the Office of Emergency Response.

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 09/26/2007
Date Made Active in Reports: 10/18/2007
Number of Days to Update: 22

Source: Illinois EPA
Telephone: 217-558-1677
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

ENG CONTROLS: Sites with Engineering Controls

Sites using of engineered barriers (e.g., asphalt or concrete paving).

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 08/14/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 37

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 08/14/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Quarterly

Inst Control: Institutional Controls

Legal or administrative restrictions on land use and/or other activities (e.g., groundwater use restrictions) which effectively limit exposure to contamination may be employed as alternatives to removal or treatment of contamination.

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 08/14/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 37

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 08/14/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Quarterly

SRP: Site Remediation Program Database

The database identifies the status of all voluntary remediation projects administered through the pre-notice site cleanup program (1989 to 1995) and the site remediation program (1996 to the present).

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 08/14/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 37

Source: Illinois Environmental Protection Agency
Telephone: 217-785-9407
Last EDR Contact: 08/14/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

DRYCLEANERS: Illinois Licensed Drycleaners

Any retail drycleaning facility in Illinois must apply for a license through the Illinois Drycleaner Environmental Response Trust Fund. Drycleaner Environmental Response Trust Fund of Illinois.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 09/19/2007
Date Made Active in Reports: 10/18/2007
Number of Days to Update: 29

Source: Drycleaner Environmental Response Trust Fund of Illinois
Telephone: 800-765-4041
Last EDR Contact: 09/19/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Varies

IMPDMENT: Surface Impoundment Inventory

Statewide inventory of industrial, municipal, mining, oil & gas , and large agricultural impoundment. This study was conducted by the Illinois EPA to assess potentail for contamination of shallow aquifers. This was a one-time study. Although many of the impoundments may no longer be present, the sites may be contaminated.

Date of Government Version: 12/31/1980
Date Data Arrived at EDR: 03/08/2002
Date Made Active in Reports: 06/03/2002
Number of Days to Update: 87

Source: Illinois Waste Management & Research Center
Telephone: 217-333-8940
Last EDR Contact: 02/20/2002
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

BROWNFIELDS: Municipal Brownfields Redevelopment Grant Program Project Descriptions

The Illinois Municipal Brownfields Redevelopment Grant Program (MBRGP) offers grants worth a maximum of $240,000 each to municipalities to assist in site investigation activities, development of cleanup objectives, and performance of cleanup activities. Brownfields are abandoned or underused industrial and/or commercial properties that are contaminated (or thought to be contaminated) and have an active potential for redevelopment.

Date of Government Version: 08/23/2007
Date Data Arrived at EDR: 08/23/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 28

Source: Illinois Environmental Protection Agency
Telephone: 217-785-3486
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

BROWNFIELDS: Redevelopment Assessment Database

The Office of Site Evaluations Redevelopment Assessment database identifies the status of all properties within the State in which the Illinois EPA's Office of Site Evaluation has conducted a municipal Brownfield Redevelopment Assessment.

Date of Government Version: 08/21/2007
Date Data Arrived at EDR: 08/22/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 29

Source: Illinois Environmental Protection Agency
Telephone: 217-524-1658
Last EDR Contact: 08/22/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

CDL: Meth Drug Lab Site Listing
A listing of clandestine/meth drug lab locations.

Date of Government Version: 08/09/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 09/20/2007
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 217-782-5750
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

AIRS: AIRS
A listing of air permits and emissions information.

Date of Government Version: 05/10/2006
Date Data Arrived at EDR: 05/15/2006
Date Made Active in Reports: 06/19/2006
Number of Days to Update: 35

Source: Illinois EPA
Telephone: 217-557-0314
Last EDR Contact: 05/03/2006
Next Scheduled EDR Contact: 07/30/2006
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/18/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 34

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 09/12/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 34

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 08/31/2007
Date Data Arrived at EDR: 08/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 41

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 09/12/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

FEDERAL RECORDS

PUBLIC SCHOOLS: Public Schools

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/13/2004
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education statistics
Telephone: 202-502-7300
Last EDR Contact: 10/10/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: N/A

PRIVATE SCHOOLS: Private Schools of the United States

The National Center for Education Statistics' primary database on private school locations in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/07/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

NURSING HOMES: Directory of Nursing Homes

Information on Medicare and Medicaid certified nursing homes in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/11/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: N/A
Telephone: 800-568-3282
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

MEDICAL CENTERS: Provider of Services Listing

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health & Human Services.

Date of Government Version: 06/01/1998
Date Data Arrived at EDR: 11/10/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
Last EDR Contact: 01/12/2007
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

COLLEGES: Integrated Postsecondary Education Data

The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

HOSPITALS: AHA Hospital Guide
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/19/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: American Hospital Association
Telephone: 800-242-2626
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 06/15/2007
Date Made Active in Reports: 08/20/2007
Number of Days to Update: 66

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 04/01/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 05/08/2007
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/30/2007
Date Made Active in Reports: 09/21/2007
Number of Days to Update: 22

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/30/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 08/23/2007
Date Made Active in Reports: 09/27/2007
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 06/08/2007
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Homes & Centers Listing
Source: Department of Children & Family Services
Telephone: 312-814-4150

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

VILLAGE OF LYONS PROPERTY
4226 LAWNDALE AVENUE
LYONS, IL 60534

TARGET PROPERTY COORDINATES

Latitude (North):	41.81470 - 41˚ 48' 52.9''
Longitude (West):	87.8265 - 87˚ 49' 35.4''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	431350.9
UTM Y (Meters):	4629320.0
Elevation:	616 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	41087-G7 BERWYN, IL
Most Recent Revision:	1998

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

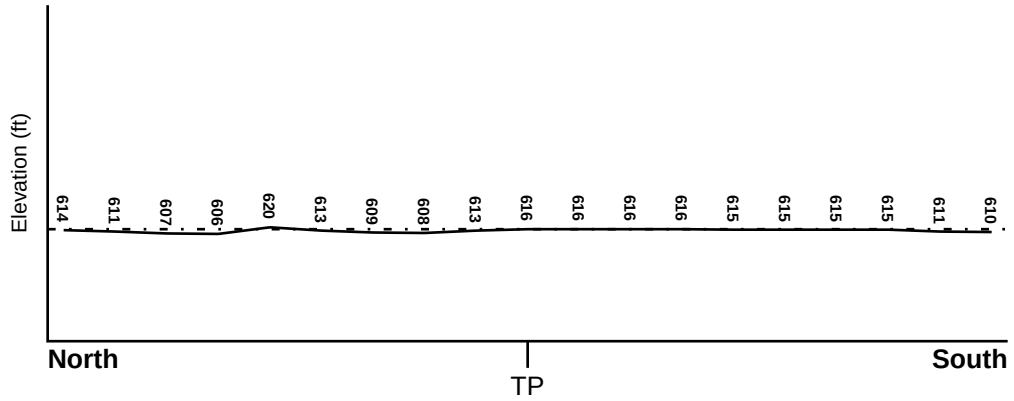
TOPOGRAPHIC INFORMATION

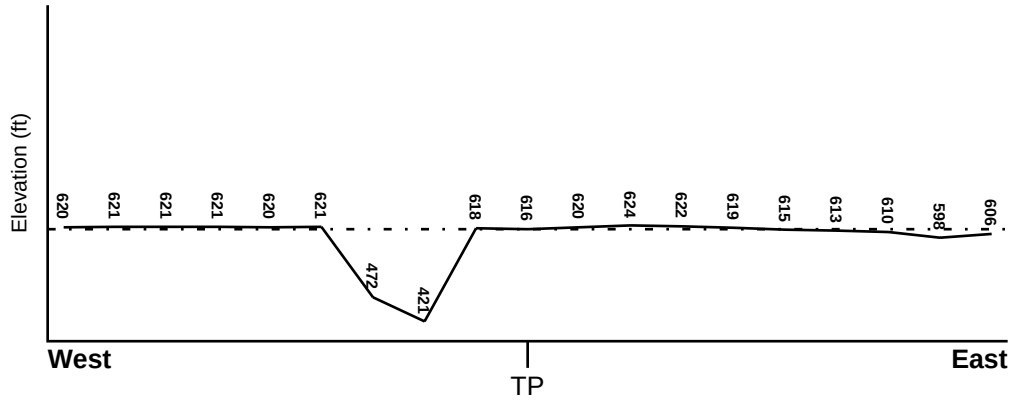
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 616 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
COOK, IL	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 1701200001B

Additional Panels in search area: 1701530001B
1700660002B
1700540130B
00000000000
1700660001B
1701210001B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BERWYN	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
12	1/4 - 1/2 Mile WNW	Not Reported
C19	1/2 - 1 Mile South	S
23	1/2 - 1 Mile West	NE
L60	1/2 - 1 Mile NNE	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Paleozoic
System:	Silurian
Series:	Middle Silurian (Niagoaran)
Code:	S2 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	URBANLAND
Soil Surface Texture:	variable
Hydrologic Group:	Not reported
Soil Drainage Class:	Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	Not Reported
Depth to Bedrock Min:	> 0 inches
Depth to Bedrock Max:	> 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	60 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay loam
silty clay
sapric material

Surficial Soil Types: silty clay loam
silty clay
sapric material

Shallow Soil Types: silty clay

Deeper Soil Types: silty clay
coprogenous earth
sapric material

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS2351659	1/4 - 1/2 Mile East
B7	USGS2351661	1/4 - 1/2 Mile ENE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
B10	USGS2351665	1/4 - 1/2 Mile ENE
G45	USGS2351678	1/2 - 1 Mile NNE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
14	IL0100875	1/4 - 1/2 Mile ESE

Note: PWS System location is not always the same as well location.

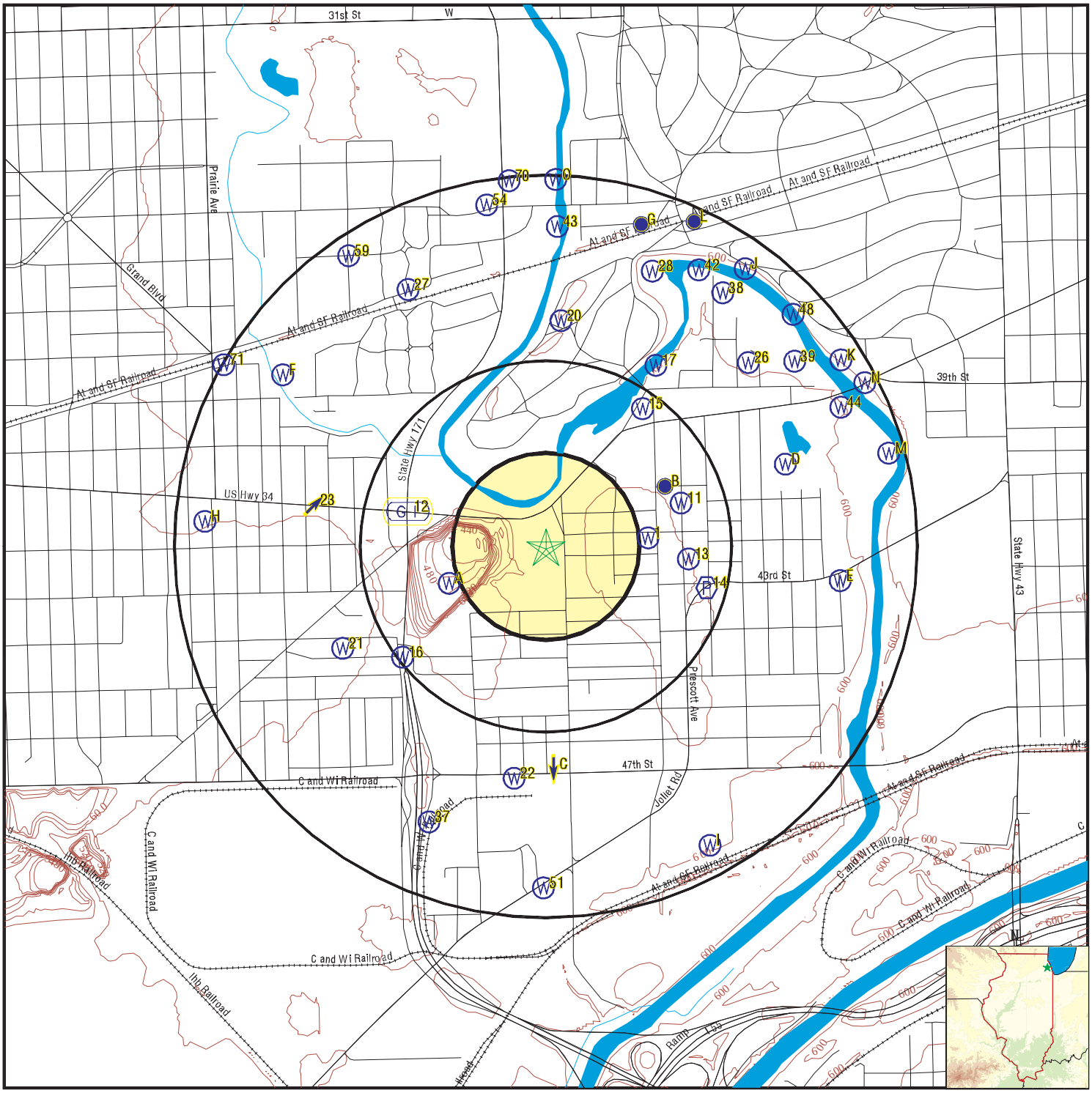
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	P5682	1/4 - 1/2 Mile WSW
A3	P5683	1/4 - 1/2 Mile WSW
A4	P5684	1/4 - 1/2 Mile WSW
B5	IL10183042	1/4 - 1/2 Mile ENE
B6	IL10183051	1/4 - 1/2 Mile ENE
B8	IL10183052	1/4 - 1/2 Mile ENE
B9	IL20003065	1/4 - 1/2 Mile ENE
11	IL20003063	1/4 - 1/2 Mile ENE
13	P5681	1/4 - 1/2 Mile East
15	P6902	1/4 - 1/2 Mile NE
16	IL10182382	1/4 - 1/2 Mile SW
17	IL10183496	1/2 - 1 Mile NNE
C18	IL10181995	1/2 - 1 Mile South
20	IL10183697	1/2 - 1 Mile North
21	P5686	1/2 - 1 Mile WSW
22	P5685	1/2 - 1 Mile South
D24	P5680	1/2 - 1 Mile ENE
D25	IL10183173	1/2 - 1 Mile ENE
26	IL10183505	1/2 - 1 Mile NE
27	IL10183870	1/2 - 1 Mile NNW
28	IL10183930	1/2 - 1 Mile NNE
E29	P5667	1/2 - 1 Mile East
E30	P5666	1/2 - 1 Mile East
E31	P5665	1/2 - 1 Mile East
E32	P5669	1/2 - 1 Mile East
E33	P5668	1/2 - 1 Mile East
E34	P5663	1/2 - 1 Mile East
E35	P5670	1/2 - 1 Mile East
E36	P5664	1/2 - 1 Mile East
37	IL10181770	1/2 - 1 Mile SSW
38	IL10183866	1/2 - 1 Mile NE
39	IL10183507	1/2 - 1 Mile NE
F40	IL10183475	1/2 - 1 Mile WNW
F41	IL10183476	1/2 - 1 Mile WNW
42	IL10183934	1/2 - 1 Mile NNE

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
43	IL10184171	1/2 - 1 Mile North
44	IL10183349	1/2 - 1 Mile ENE
H46	IL10182877	1/2 - 1 Mile West
G47	IL10184178	1/2 - 1 Mile NNE
48	IL10183727	1/2 - 1 Mile NE
I49	IL10181672	1/2 - 1 Mile SSE
I50	P5766	1/2 - 1 Mile SSE
51	IL10181550	1/2 - 1 Mile South
J52	IL10183942	1/2 - 1 Mile NE
J53	IL10183943	1/2 - 1 Mile NE
54	IL10184262	1/2 - 1 Mile North
K55	IL10183514	1/2 - 1 Mile ENE
K56	IL10183515	1/2 - 1 Mile ENE
K57	IL10183516	1/2 - 1 Mile ENE
H58	P5689	1/2 - 1 Mile West
59	IL10184042	1/2 - 1 Mile NW
M61	IL10183182	1/2 - 1 Mile ENE
M62	IL10183184	1/2 - 1 Mile ENE
M63	IL10183183	1/2 - 1 Mile ENE
L64	IL10184183	1/2 - 1 Mile NNE
N65	IL10183455	1/2 - 1 Mile ENE
N66	IL10183456	1/2 - 1 Mile ENE
L67	IL10184244	1/2 - 1 Mile NNE
O68	IL10184344	1/2 - 1 Mile North
O69	IL10184345	1/2 - 1 Mile North
70	IL10184341	1/2 - 1 Mile North
71	IL10183498	1/2 - 1 Mile WNW

PHYSICAL SETTING SOURCE MAP - 2062274.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data

0 1/4 1/2 1 Miles

N

SITE NAME: Village of Lyons Property ADDRESS: 4226 Lawndale Avenue Lyons IL 60534 LAT/LONG: 41.8147 / 87.8265	CLIENT: Bradburne, Briller & Johnson CONTACT: Kevin McCartney INQUIRY #: 2062274.2s DATE: October 26, 2007 3:19 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **East** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS2351659**

Agency cd:	USGS	Site no:	414854087491601
Site name:	38N12E- 1.8e1		
Latitude:	414854		
Longitude:	874916	Dec lat:	41.81503176
Dec lon:	-87.82116844	Coor meth:	M
Coor accr:	F	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	17
State:	17	County:	031
Country:	US	Land net:	Not Reported
Location map:	BERWYN	Map scale:	24000
Altitude:	620.60		
Altitude method:	Level or other surveying method		
Altitude accuracy:	0.1		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Des Plaines. Illinois, Wisconsin. Area = 1440 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	192905
Date inventoried:	Not Reported	Mean greenwich time offset:	CST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	2020	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	88801		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1929-10-21
Water quality data end date:	1976-03-29	Water quality data count:	5
Ground water data begin date:	1929-06-00	Ground water data end date:	1953-00-00
Ground water data count:	10		

Ground-water levels, Number of Measurements: 10

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1953	452				
Note: The site had been pumped recently.					
1952	456				
Note: The site had been pumped recently.					
1951	413				
Note: The site had been pumped recently.					
1949	426				
Note: The site had been pumped recently.					
1948	414				
Note: The site had been pumped recently.					
1945	381				
Note: The site had been pumped recently.					
1944	397				
Note: The site had been pumped recently.					
1943	375				
Note: The site had been pumped recently.					

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1936	305				
Note: The site had been pumped recently.					
1929-06	305				

A2
WSW **IL WELLS** **P5682**
1/4 - 1/2 Mile
Lower

Well ID:	189626	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	KNOELER BENDER STONE & ASSOC		
Permit:	Not Reported	Date Drilled:	02/27/1976
Depth (in feet):	371	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	02	Plot Location:	Not Reported
Well Use:	Test Hole	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	Not Reported		

A3
WSW **IL WELLS** **P5683**
1/4 - 1/2 Mile
Lower

Well ID:	235181	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	AMOCO OIL		
Permit:	MONITORING WELL	Date Drilled:	02/16/1993
Depth (in feet):	7	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	02	Plot Location:	Not Reported
Well Use:	Test Well	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	ECC		

A4
WSW **IL WELLS** **P5684**
1/4 - 1/2 Mile
Lower

Well ID:	235182	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	AMOCO OIL		
Permit:	MONITORING WELL	Date Drilled:	02/16/1993
Depth (in feet):	10	Aquifer Type:	Dry Hole
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	02	Plot Location:	Not Reported
Well Use:	Test Well	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	ECC		

B5
ENE **IL WELLS** **IL10183042**
1/4 - 1/2 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	215162		
Api:	120310239400	Status:	Water Well
Longitude:	-87.820831		
Latitude:	41.817087		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Lyons City Well
Farm num:	Not Reported	Company na:	Cater William
Elevation:	620		
Elevref:	Topographic Map		
Total dept:	2020		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82092538		
Shapey:	41.81713475		
Site id:	IL10183042		

B6
ENE **IL WELLS** **IL10183051**
1/4 - 1/2 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	74996		
Api:	120313305100	Status:	Water Well
Longitude:	-87.82047		
Latitude:	41.817217		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Lyons City Well
Farm num:	2	Company na:	Cater, W.H.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	1980		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82056437		
Shapey:	41.81726475		
Site id:	IL10183051		

B7
ENE **FED USGS** **USGS2351661**
1/4 - 1/2 Mile
Higher

Agency cd:	USGS	Site no:	414900087491201
Site name:	38N12E- 1.7e1		
Latitude:	414900		
Longitude:	874912	Dec lat:	41.81669843
Dec lon:	-87.82005734	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	17
State:	17	County:	031
Country:	US	Land net:	NWSWNWS 1 T 38N R 12E 3
Location map:	BERWYN	Map scale:	24000
Altitude:	618.00		
Altitude method:	Unknown		
Altitude accuracy:	Not Reported		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Des Plaines. Illinois, Wisconsin. Area = 1440 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19290601
Date inventoried:	Not Reported	Mean greenwich time offset:	CST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1980	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	034		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1938-11-14
Water quality data end date:	1938-11-14	Water quality data count:	1
Ground water data begin date:	1929-06-01	Ground water data end date:	1929-06-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1929-06-01	298.00	

Map ID Direction Distance Elevation		Database	EDR ID Number
B8 **ENE** **1/4 - 1/2 Mile** **Higher**		**IL WELLS**	**IL10183052**

Source:	IL Water Wells Records		
Objectid:	248771		
Api:	120313353600	Status:	Water Well
Longitude:	-87.820286		
Latitude:	41.817223		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Lyons, Village
Farm num:	1	Company na:	Not Reported
Elevation:	620		
Elevref:	Not Reported		
Total dept:	2020		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	440		
Shapex:	-87.82038037		
Shapey:	41.81727075		
Site id:	IL10183052		

B9 **ENE** **1/4 - 1/2 Mile** **Higher**		**IL WELLS**	**IL20003065**

Source:	IL Water Well Location Information		
Syskey:	716160		
Facilityid:	WL20592	Watertype:	GW
Avail:	O	Facname:	W1 ABANDONED
Facstatus:	I		
Depth draw:	0		
Depth toca:	0		
Depth comp:	1750		
Lat dd:	41.816667		
Long dd:	-87.819722		
Syskey:	716160		
Systemid:	IL0311710	Sysname:	LYONS
Acname:	KOCH, GREG	Addr1:	VILLAGE HALL
Addr2:	7801 OGDEN AVE.	City:	LYONS
St:	IL	Zip:	60534
Phoneno:	708-780-5224		

B10 **ENE** **1/4 - 1/2 Mile** **Higher**		**FED USGS**	**USGS2351665**

Agency cd:	USGS	Site no:	414902087491201
Site name:	38N12E- 1.8g1		
Latitude:	414902		
Longitude:	874912	Dec lat:	41.81725398
Dec lon:	-87.82005736	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	17
State:	17	County:	031
Country:	US	Land net:	SWNWNWS 1 T 38N R 12E 3
Location map:	BERWYN	Map scale:	24000
Altitude:	616.00		
Altitude method:	Unknown		
Altitude accuracy:	Not Reported		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Des Plaines. Illinois, Wisconsin. Area = 1440 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19130101
Date inventoried:	Not Reported	Mean greenwich time offset:	CST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	1650	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	034		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1918-08-06
Water quality data end date:	1918-08-06	Water quality count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

11
ENE **IL WELLS** **IL20003063**
1/4 - 1/2 Mile
Higher

Source:	IL Water Well Location Information		
Syskey:	716160		
Facilityid:	WL00184	Watertype:	GW
Avail:	O	Facname:	W2 NE CORNER JOLIET AVE AND COLLINS
Facstatus:	I		
Depth draw:	0		
Depth toca:	0		
Depth comp:	2020		
Lat dd:	41.816389		
Long dd:	-87.819444		

Syskey:	716160		
Systemid:	IL0311710	Sysname:	LYONS
Acname:	KOCH, GREG	Addr1:	VILLAGE HALL
Addr2:	7801 OGDEN AVE.	City:	LYONS
St:	IL	Zip:	60534
Phoneno:	708-780-5224		

Map ID Direction Distance Elevation			Database	EDR ID Number
12 **WNW** **1/4 - 1/2 Mile** **Lower**	Site ID:	S102620421	**AQUIFLOW**	**62236**
	Groundwater Flow:	Not Reported		
	Deep Water Depth:	4.3		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	3.2		
	Current Deep Depth:	7.10		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	4.70		
	Date:	06/30/1997		

13
East
1/4 - 1/2 Mile
Higher

IL WELLS **P5681**

Well ID:	023787	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	HAVEMANN'S GREENHOUSE		
Permit:	Not Reported	Date Drilled:	00/00/1956
Depth (in feet):	2000	Aquifer Type:	Not Reported
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	7E
Well Use:	Commercial	Well Type:	ASSUMED DRILLED
Record Type:	Chemical Analysis,Any other type of record		
Driller:	Not Reported		

14
ESE
1/4 - 1/2 Mile
Higher

FRDS PWS **IL0100875**

PWS ID:	IL0100875	PWS Status:	Active
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	PORTAGE WOODS 4138 SO JOLIET RD WO HARLEM AV82013 LYONS, IL 60534		
Addressee / Facility:	Not Reported		
Facility Latitude:	41 48 47	Facility Longitude:	087 49 05
City Served:	Not Reported		
Treatment Class:	Untreated	Population:	00000400

Violations information not reported.

15
NE
1/4 - 1/2 Mile
Lower

IL WELLS **P6902**

Well ID:	217987	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	C KOZAYED LOTS 15 & 16		
Permit:	0310005190	Date Drilled:	03/24/1990
Depth (in feet):	290	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	39N	Range:	12E
Section:	36	Plot Location:	8A
Well Use:	Domestic	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	KNIERIM		

16
SW **IL WELLS** **IL10182382**
1/4 - 1/2 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	154755		
Api:	120312669600	Status:	Engineering Test
Longitude:	-87.833883		
Latitude:	41.810328		
Section :	2		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	MDS of Chicago
Farm num:	D1-AS-103	Company na:	Knoeler Bender Stone
Elevation:	615		
Elevref:	Ground level		
Total dept:	371		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.83397662		
Shapey:	41.81037668		
Site id:	IL10182382		

17
NNE **IL WELLS** **IL10183496**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	197340		
Api:	120313006500	Status:	Water Well
Longitude:	-87.820669		
Latitude:	41.821719		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Kozoyed, Edwin
Farm num:	Not Reported	Company na:	Knierim, Phil
Elevation:	0		
Elevref:	Not Reported		
Total dept:	290		
Wformation:	rock		
Wfmfrom:	45		
Wfmto:	290		
Pumpgpm:	0		
Shapex:	-87.82076251		
Shapey:	41.82176672		
Site id:	IL10183496		

C18
South
1/2 - 1 Mile
Lower

IL WELLS **IL10181995**

Source:	IL Water Wells Records		
Objectid:	31972		
Api:	120312492600	Status:	Water Well
Longitude:	-87.826414		
Latitude:	41.805986		
Section :	2		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Lyons Village
Farm num:	3	Company na:	Wehling Well Works Inc.
Elevation:	612		
Elevref:	Ground level		
Total dept:	210		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82650825		
Shapey:	41.80603377		
Site id:	IL10181995		

C19
South
1/2 - 1 Mile
Lower

AQUIFLOW **27232**

Site ID:	S102944920
Groundwater Flow:	S
Deep Water Depth:	18
Average Water Depth:	Not Reported
Shallow Water Depth:	10
Current Deep Depth:	18
Current Average Depth:	Not Reported
Current Shallow Depth:	10
Date:	04/08/1995

20
North
1/2 - 1 Mile
Higher

IL WELLS **IL10183697**

Source:	IL Water Wells Records		
Objectid:	121746		
Api:	120313385400	Status:	Water Well
Longitude:	-87.825616		
Latitude:	41.823460		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	National Grove
Farm num:	4165	Company na:	Not Reported
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82570973		
Shapey:	41.82350866		
Site id:	IL10183697		

21
WSW **IL WELLS** **P5686**
1/2 - 1 Mile
Higher

Well ID:	027366	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	WERNER MFG CO		
Permit:	Not Reported	Date Drilled:	09/11/1957
Depth (in feet):	385	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	02	Plot Location:	6D
Well Use:	IN	Well Type:	ASSUMED DRILLED
Record Type:	Geology,Chemical Analysis,Inventory,Any other type of record		
Driller:	J P MILLER		

22
South **IL WELLS** **P5685**
1/2 - 1 Mile
Lower

Well ID:	029666	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	LYONS (MSD #MW-3)		
Permit:	M033814	Date Drilled:	12/30/1974
Depth (in feet):	210	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	02	Plot Location:	3A
Well Use:	MU	Well Type:	||
Record Type:	Construction Report,Geology,Indicates comment in owner's field something unusual		
Driller:	WEHLING		

Map ID Direction Distance Elevation			Database	EDR ID Number
23 **West** **1/2 - 1 Mile** **Higher**	Site ID:	S100334406	**AQUIFLOW**	**62720**
	Groundwater Flow:	NE		
	Deep Water Depth:	10		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	8		
	Current Deep Depth:	7.85		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	5.08		
	Date:	08/28/1998		

D24
ENE
1/2 - 1 Mile
Lower

IL WELLS **P5680**

Well ID:	027559	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	CERMAK PARK		
Permit:	Not Reported	Date Drilled:	00/00/0000
Depth (in feet):	200	Aquifer Type:	Not Reported
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	5G
Well Use:	Park	Well Type:	ASSUMED DRILLED
Record Type:	Any other type of record		
Driller:	GUTZLER		

D25
ENE
1/2 - 1 Mile
Lower

IL WELLS **IL10183173**

Source:	IL Water Wells Records		
Objectid:	177891		
Api:	120310238900	Status:	Engineering Test
Longitude:	-87.813373		
Latitude:	41.817973		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Test Boring
Farm num:	46	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	31		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		

Shapex:	-87.81347216
Shapey:	41.81822881
Site id:	IL10183173

26
NE **IL WELLS** **IL10183505**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	146200		
Api:	120313388500	Status:	Water Well
Longitude:	-87.815842		
Latitude:	41.821825		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Taylor, Donald, Sr.
Farm num:	Not Reported	Company na:	Fykes, Charles N.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	205		
Wformation:	limestone		
Wfmfrom:	40		
Wfmto:	205		
Pumpgpm:	18		
Shapex:	-87.81593635		
Shapey:	41.82187376		
Site id:	IL10183505		

27
NNW **IL WELLS** **IL10183870**
1/2 - 1 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	217026		
Api:	120310281500	Status:	Engineering Test
Longitude:	-87.83359		
Latitude:	41.824678		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Hwy C B & Q R R
Farm num:	15	Company na:	Dist Highway Office
Elevation:	620		
Elevref:	Ground level		
Total dept:	46		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		

Shapex:	-87.83368503
Shapey:	41.82472559
Site id:	IL10183870

28
NNE **IL WELLS** **IL10183930**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	41105		
Api:	120310283000	Status:	Engineering Test
Longitude:	-87.820851		
Latitude:	41.825396		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Hwy C B & Q R R
Farm num:	62	Company na:	Dist Highway Office
Elevation:	617		
Elevref:	Ground level		
Total dept:	35		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82094462		
Shapey:	41.8254437		
Site id:	IL10183930		

E29
East **IL WELLS** **P5667**
1/2 - 1 Mile
Lower

Well ID:	189592	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	SANITARY DIS OF CHICAGO #2		
Permit:	Not Reported	Date Drilled:	00/00/1901
Depth (in feet):	21	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Monitoring	Well Type:	--
Record Type:	Geology,Any other type of record		
Driller:	Not Reported		

E30
East **IL WELLS** **P5666**
1/2 - 1 Mile
Lower

Well ID:	189590	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	SANT DIST CHI #47		
Permit:	Not Reported	Date Drilled:	00/00/1901
Depth (in feet):	31	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Monitoring	Well Type:	--
Record Type:	Geology,Any other type of record		
Driller:	Not Reported		

E31
East
1/2 - 1 Mile
Lower

IL WELLS **P5665**

Well ID:	189589	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	SAN DIST CHI #46		
Permit:	Not Reported	Date Drilled:	00/00/1901
Depth (in feet):	31	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Monitoring	Well Type:	--
Record Type:	Geology,Any other type of record		
Driller:	Not Reported		

E32
East
1/2 - 1 Mile
Lower

IL WELLS **P5669**

Well ID:	189596	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	SAN DIST CHI #54		
Permit:	Not Reported	Date Drilled:	00/00/1901
Depth (in feet):	32	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Monitoring	Well Type:	--
Record Type:	Geology,Any other type of record		
Driller:	Not Reported		

E33
East
1/2 - 1 Mile
Lower

IL WELLS **P5668**

Well ID:	189594	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	SANT DIST OF CHICAGO #8		
Permit:	Not Reported	Date Drilled:	00/00/1901
Depth (in feet):	29	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Test Hole	Well Type:	--
Record Type:	Geology,Any other type of record		
Driller:	Not Reported		

E34
East
1/2 - 1 Mile
Lower

IL WELLS **P5663**

Well ID:	026759	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	L H WARREN & SON		
Permit:	Not Reported	Date Drilled:	00/00/0000
Depth (in feet):	50	Aquifer Type:	Not Reported
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Domestic	Well Type:	ASSUMED DRILLED
Record Type:	Any other type of record		
Driller:	Not Reported		

E35
East
1/2 - 1 Mile
Lower

IL WELLS **P5670**

Well ID:	189598	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	KNOERLE BENDER STONE & ASSOC		
Permit:	Not Reported	Date Drilled:	12/00/1975
Depth (in feet):	387	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Test Hole	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	Not Reported		

E36
East
1/2 - 1 Mile
Lower

IL WELLS **P5664**

Well ID:	026760	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	L H WARREN & SON		
Permit:	Not Reported	Date Drilled:	00/00/0000
Depth (in feet):	100	Aquifer Type:	Not Reported
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	01	Plot Location:	Not Reported
Well Use:	Domestic	Well Type:	ASSUMED DRILLED
Record Type:	Any other type of record		
Driller:	Not Reported		

37
SSW **IL WELLS** **IL10181770**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	98565		
Api:	120310243100	Status:	Engineering Test
Longitude:	-87.832497		
Latitude:	41.803900		
Section :	11		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Fa133
Farm num:	B-1	Company na:	IL Dept. of Transportation
Elevation:	614		
Elevref:	Ground level		
Total dept:	41		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.83259039		
Shapey:	41.80394773		
Site id:	IL10181770		

38
NE **IL WELLS** **IL10183866**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	224528		
Api:	120312978600	Status:	Water Well
Longitude:	-87.817175		
Latitude:	41.824551		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Radosevich, Mike
Farm num:	Not Reported	Company na:	Knierim, Phil
Elevation:	595		
Elevref:	Ground level		
Total dept:	90		
Wformation:	limestone		
Wfmfrom:	40		
Wfmto:	90		
Pumpgpm:	0		
Shapex:	-87.81726947		
Shapey:	41.82459873		
Site id:	IL10183866		

39
NE **IL WELLS** **IL10183507**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	190196		
Api:	120313401600	Status:	Water Well
Longitude:	-87.813427		
Latitude:	41.821877		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Brannick, Kevin
Farm num:	Not Reported	Company na:	Matherly, Hubert
Elevation:	0		
Elevref:	Not Reported		
Total dept:	285		
Wformation:	limestone		
Wfmfrom:	40		
Wfmto:	285		
Pumpgpm:	20		
Shapex:	-87.81352127		
Shapey:	41.82192578		
Site id:	IL10183507		

F40
WNW **IL WELLS** **IL10183475**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	353		
Api:	120310281600	Status:	Engineering Test
Longitude:	-87.840124		
Latitude:	41.821349		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Pit
Farm num:	1	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	23		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.84021915		
Shapey:	41.82139655		
Site id:	IL10183475		

F41
WNW **IL WELLS** **IL10183476**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	70759		
Api:	120313072600	Status:	Engineering Test
Longitude:	-87.840124		
Latitude:	41.821349		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	MSD OF Chicago
Farm num:	D4-DS-406	Company na:	ATEC
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.84021915		
Shapey:	41.82139655		
Site id:	IL10183476		

42
NNE **IL WELLS** **IL10183934**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	206403		
Api:	120313073100	Status:	Engineering Test
Longitude:	-87.818428		
Latitude:	41.825445		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	MSD of Chicago
Farm num:	D4-DS-403B	Company na:	ATEC
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81852254		
Shapey:	41.82549272		
Site id:	IL10183934		

43
North **IL WELLS** **IL10184171**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	56049		
Api:	120310281900	Status:	Engineering Test
Longitude:	-87.825798		
Latitude:	41.827137		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Test Pit
Farm num:	5	Company na:	Chicago Sanitary Dist.
Elevation:	607		
Elevref:	Ground level		
Total dept:	31		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82589283		
Shapey:	41.82718564		
Site id:	IL10184171		

44
ENE **IL WELLS** **IL10183349**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	64883		
Api:	120313419400	Status:	Stratigraphic Test
Longitude:	-87.811014		
Latitude:	41.820085		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	North Side Rock Tunnel
Farm num:	71-95 (83)	Company na:	Metro Sanitary Dist
Elevation:	595		
Elevref:	Ground level		
Total dept:	836		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81110713		
Shapey:	41.82013382		
Site id:	IL10183349		

G45
NNE **FED USGS** **USGS2351678**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	414938087491901
Site name:	39N12E-36.8d1		
Latitude:	414938		
Longitude:	874919	Dec lat:	41.8272539
Dec lon:	-87.82200216	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	17
State:	17	County:	031
Country:	US	Land net:	SWS36 T 39N R 12E 3
Location map:	BERWYN	Map scale:	24000
Altitude:	618.00		
Altitude method:	Unknown		
Altitude accuracy:	Not Reported		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	Des Plaines. Illinois, Wisconsin. Area = 1440 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	1924
Date inventoried:	Not Reported	Mean greenwich time offset:	CST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	2047	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	88801		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1935-09-13
Water quality data end date:	1946-05-07	Water quality data count:	2
Ground water data begin date:	1959-10-27	Ground water data end date:	1959-10-27
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1959-10-27	103.00	

Note: The site was being pumped.

Map ID Direction Distance Elevation		Database	EDR ID Number
H46 **West** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**IL10182877**

Source:	IL Water Wells Records		
Objectid:	197414		
Api:	120310043700	Status:	Water Well
Longitude:	-87.84377		
Latitude:	41.815707		
Section :	3		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Culligan Soft Water
Farm num:	1	Company na:	Miller, J. P. Artesian Well Co.
Elevation:	620		
Elevref:	Ground level		
Total dept:	340		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.84386512		
Shapey:	41.81575456		
Site id:	IL10182877		

G47 **NNE** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**IL10184178**

Source:	IL Water Wells Records		
Objectid:	70257		
Api:	120310283100	Status:	Water Well
Longitude:	-87.820942		
Latitude:	41.827236		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Riverside City
Farm num:	3	Company na:	Miller, J. P. Art. Well
Elevation:	619		
Elevref:	Topographic Map		
Total dept:	2047		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82103567		
Shapey:	41.82728368		
Site id:	IL10184178		

Map ID Direction Distance Elevation		Database	EDR ID Number
48 **NE** **1/2 - 1 Mile** **Lower**		**IL WELLS**	**IL10183727**

Source:	IL Water Wells Records		
Objectid:	187539		
Api:	120312671500	Status:	Engineering Test
Longitude:	-87.813507		
Latitude:	41.823709		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Des Plaines Riv Syst
Farm num:	Not Reported	Company na:	Knoeler Bender Stone
Elevation:	611		
Elevref:	Ground level		
Total dept:	367		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81360132		
Shapey:	41.82375677		
Site id:	IL10183727		

I49 **SSE** **1/2 - 1 Mile** **Lower**		**IL WELLS**	**IL10181672**

Source:	IL Water Wells Records		
Objectid:	6003		
Api:	120312493100	Status:	Water Well
Longitude:	-87.817931		
Latitude:	41.802952		
Section :	12		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Pelron Corp
Farm num:	Tw-7	Company na:	Wehling Well Works Inc.
Elevation:	603		
Elevref:	Ground level		
Total dept:	211		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81802388		
Shapey:	41.80300086		
Site id:	IL10181672		

Map ID Direction Distance Elevation	Database	EDR ID Number
I50 **SSE** **1/2 - 1 Mile** **Lower**	**IL WELLS**	**P5766**

Well ID:	213718	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	PELRON CORPORATION TW-74-7		
Permit:	033817	Date Drilled:	11/15/1974
Depth (in feet):	211	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	12	Plot Location:	7G
Well Use:	Test Well	Well Type:	--
Record Type:	Construction Report,Geology		
Driller:	WEHLING		

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51 **South** **1/2 - 1 Mile** **Lower**	**IL WELLS**	**IL10181550**

Source:	IL Water Wells Records		
Objectid:	239157		
Api:	120310243300	Status:	Water Well
Longitude:	-87.826529		
Latitude:	41.801320		
Section :	11		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Universal Oil Co
Farm num:	Not Reported	Company na:	Miller, J. P. Art. Well
Elevation:	610		
Elevref:	Topographic Map		
Total dept:	1564		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82662212		
Shapey:	41.8013688		
Site id:	IL10181550		

J52 **NE** **1/2 - 1 Mile** **Lower**	**IL WELLS**	**IL10183942**

Source:	IL Water Wells Records		
Objectid:	74516		
Api:	120310282800	Status:	Engineering Test
Longitude:	-87.816006		
Latitude:	41.825494		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Pit
Farm num:	6	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	42		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81609946		
Shapey:	41.82554174		
Site id:	IL10183942		

J53
NE **IL WELLS** **IL10183943**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	131042		
Api:	120313073000	Status:	Engineering Test
Longitude:	-87.816006		
Latitude:	41.825494		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	MSD of Chicago
Farm num:	D4-DS-403A	Company na:	ATEC
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81609946		
Shapey:	41.82554174		
Site id:	IL10183943		

54
North **IL WELLS** **IL10184262**
1/2 - 1 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	73790		
Api:	120310281800	Status:	Engineering Test
Longitude:	-87.829488		
Latitude:	41.827979		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Pit
Farm num:	4	Company na:	Chicago Sanitary Dist.
Elevation:	616		
Elevref:	Ground level		
Total dept:	22		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82958298		
Shapey:	41.8280266		
Site id:	IL10184262		

K55
ENE **IL WELLS** **IL10183514**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	77012		
Api:	120310282600	Status:	Engineering Test
Longitude:	-87.811016		
Latitude:	41.821929		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Test Boring
Farm num:	44	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	29		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81110919		
Shapey:	41.8219778		
Site id:	IL10183514		

K56
ENE **IL WELLS** **IL10183515**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	115209		
Api:	120310282900	Status:	Engineering Test
Longitude:	-87.811016		
Latitude:	41.821929		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Pit
Farm num:	7	Company na:	Chicago Sanitary Dist.
Elevation:	596		
Elevref:	Ground level		
Total dept:	41		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81110919		
Shapey:	41.8219778		
Site id:	IL10183515		

K57
ENE **IL WELLS** **IL10183516**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	128886		
Api:	120313072800	Status:	Engineering Test
Longitude:	-87.811016		
Latitude:	41.821929		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	MSD of Chicago
Farm num:	D4-DS-402	Company na:	ATEC
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81110919		
Shapey:	41.8219778		
Site id:	IL10183516		

H58
West **IL WELLS** **P5689**
1/2 - 1 Mile
Higher

Well ID:	023789	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	CULLIGAN SOFT WATER SERVICE		
Permit:	Not Reported	Date Drilled:	08/00/1961
Depth (in feet):	340	Aquifer Type:	Unconsolidated
County Code:	031	County:	COOK
Township:	38N	Range:	12E
Section:	03	Plot Location:	2F
Well Use:	IN	Well Type:	ASSUMED DRILLED
Record Type:	Construction Report,Geology,Chemical Analysis,Any other type of record		
Driller:	J P MILLER		

Map ID Direction Distance Elevation		Database	EDR ID Number
59 **NW** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**IL10184042**

Source:	IL Water Wells Records		
Objectid:	54948		
Api:	120310281300	Status:	Water Well
Longitude:	-87.83669		
Latitude:	41.825997		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Chicago Zoo Gardens
Farm num:	Not Reported	Company na:	Miller, J. P. Art. Well
Elevation:	620		
Elevref:	Ground level		
Total dept:	2062		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.83678517		
Shapey:	41.82604455		
Site id:	IL10184042		

L60 **NNE** **1/2 - 1 Mile** **Lower**	Site ID:	S102945201	**AQUIFLOW**	**62369**
	Groundwater Flow:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	23.5		
	Current Deep Depth:	Not Reported		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	Not Reported		
	Date:	10/12/1993		

M61 **ENE** **1/2 - 1 Mile** **Lower**	**IL WELLS**	**IL10183182**

Source:	IL Water Wells Records		
Objectid:	49202		
Api:	120312669500	Status:	Engineering Test
Longitude:	-87.808514		
Latitude:	41.818082		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Des Plaines Riv Syst
Farm num:	Not Reported	Company na:	Knoeler Bender Stone
Elevation:	508		
Elevref:	Ground level		
Total dept:	387		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.808613		
Shapey:	41.81833985		
Site id:	IL10183182		

M62
ENE **IL WELLS** **IL10183184**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	178202		
Api:	120310239200	Status:	Engineering Test
Longitude:	-87.808514		
Latitude:	41.818082		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Test Boring
Farm num:	8	Company na:	Chicago Sanitary Dist.
Elevation:	594		
Elevref:	Ground level		
Total dept:	29		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.808613		
Shapey:	41.81833985		
Site id:	IL10183184		

M63
ENE **IL WELLS** **IL10183183**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	73225		
Api:	120310239000	Status:	Engineering Test
Longitude:	-87.808514		
Latitude:	41.818082		
Section :	1		
Twp:	38		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Boring
Farm num:	47	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	31		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.808613		
Shapey:	41.81833985		
Site id:	IL10183183		

L64
NNE **IL WELLS** **IL10184183**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	5898		
Api:	120313073200	Status:	Engineering Test
Longitude:	-87.818515		
Latitude:	41.827282		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	MSD of Chicago
Farm num:	D4-DS-403C	Company na:	ATEC
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81860959		
Shapey:	41.82732971		
Site id:	IL10184183		

N65
ENE **IL WELLS** **IL10183455**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	99541		
Api:	120310282700	Status:	Engineering Test
Longitude:	-87.80977		
Latitude:	41.821041		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Boring
Farm num:	45	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	32		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.80986412		
Shapey:	41.82108882		
Site id:	IL10183455		

N66
ENE **IL WELLS** **IL10183456**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	223711		
Api:	120310282500	Status:	Engineering Test
Longitude:	-87.80977		
Latitude:	41.821041		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Test Boring
Farm num:	4	Company na:	Chicago Sanitary Dist.
Elevation:	605		
Elevref:	Ground level		
Total dept:	28		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.80986412		
Shapey:	41.82108882		
Site id:	IL10183456		

L67
NNE **IL WELLS** **IL10184244**
1/2 - 1 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	195480		
Api:	120310282400	Status:	Engineering Test
Longitude:	-87.819145		
Latitude:	41.827735		
Section :	36		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Hwy C B & Q R R
Farm num:	12	Company na:	Dist Highway Office
Elevation:	617		
Elevref:	Ground level		
Total dept:	44		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.81923963		
Shapey:	41.8277827		
Site id:	IL10184244		

O68
North
1/2 - 1 Mile
Lower

IL WELLS **IL10184344**

Source:	IL Water Wells Records		
Objectid:	16887		
Api:	120313385300	Status:	Water Well
Longitude:	-87.825889		
Latitude:	41.828974		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	National Grove
Farm num:	4162	Company na:	Not Reported
Elevation:	0		
Elevref:	Not Reported		
Total dept:	0		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82598389		
Shapey:	41.82902263		
Site id:	IL10184344		

O69
North
1/2 - 1 Mile
Lower

IL WELLS **IL10184345**

Source:	IL Water Wells Records		
Objectid:	18644		
Api:	120310282100	Status:	Engineering Test
Longitude:	-87.825889		
Latitude:	41.828974		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Test Boring
Farm num:	5C	Company na:	Chicago Sanitary Dist.
Elevation:	0		
Elevref:	Not Reported		
Total dept:	27		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82598389		
Shapey:	41.82902263		
Site id:	IL10184345		

70
North **IL WELLS** **IL10184341**
1/2 - 1 Mile
Lower

Source:	IL Water Wells Records		
Objectid:	161182		
Api:	120312671400	Status:	Engineering Test
Longitude:	-87.828319		
Latitude:	41.828925		
Section :	35		
Twp:	39		
Tdir:	N		
Rng:	12		
Rdir:	E	Farm name:	Des Plaines Riv Syst
Farm num:	Not Reported	Company na:	Knoeler Bender Stone
Elevation:	615		
Elevref:	Ground level		
Total dept:	386		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.82841397		
Shapey:	41.82897261		
Site id:	IL10184341		

71
WNW **IL WELLS** **IL10183498**
1/2 - 1 Mile
Higher

Source:	IL Water Wells Records		
Objectid:	276950		
Api:	120310281100	Status:	Engineering Test
Longitude:	-87.843203		
Latitude:	41.821744		
Section :	34		
Twp:	39		
Tdir:	N		
Rng:	12		

Rdir:	E	Farm name:	Hwy C B & Q R R
Farm num:	16	Company na:	Dist Highway Office
Elevation:	0		
Elevref:	Not Reported		
Total dept:	54		
Wformation:	Not Reported		
Wfmfrom:	0		
Wfmto:	0		
Pumpgpm:	0		
Shapex:	-87.84329827		
Shapey:	41.82179152		
Site id:	IL10183498		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: IL Radon

Radon Test Results

Floor	# Sites	Min pCi/L	Avg pCi/L	Max pCi/L	# Sites>4pCi/L	# Sites>20	County
Basement	212	0.6	2.9	11.6	40	0	COOK
1st Floor living area	43	0.5	2.3	5.8	4	0	COOK
1st Floor bedroom	6	1	2.1	3	0	0	COOK
Total	261	0.5	2.8	11.6	44	0	COOK

Federal EPA Radon Zone for COOK County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for COOK COUNTY, IL

Number of sites tested: 82

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.273 pCi/L	96%	4%	0%
Living Area - 2nd Floor	0.900 pCi/L	100%	0%	0%
Basement	1.740 pCi/L	93%	7%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Records
Source: Illinois Geological Survey
Telephone: 217-333-4747

Illinois Private Well Database and PICS (Public, Industrial, Commercial Survey)
Source: Illinois State Water Survey
Telephone: 217-333-9043

Water Well Location Information
Source: Illinois Environmental Protection Agency
Telephone: 217-782-0810

OTHER STATE DATABASE INFORMATION

RADON

State Database: IL Radon
Source: Department of Nuclear Safety
Telephone: 217-785-9958
County Radon Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX C

COPY OF LEGAL DESCRIPTION

SCHEDULE 1

LEGAL DESCRIPTION OF PROPERTY

THAT PART OF LOT 2, IN SCHULZ'S SUBDIVISION, IN THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 2, TOWNSHIP 38 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED APRIL 30, 1886, AS DOCUMENT NO. 712410, BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE INTERSECTION OF THE NORTH LINE OF 43RD STREET (33 FEET WIDE) AND THE WEST LINE OF LAWNDALE AVENUE (66 FEET WIDE); THENCE NORTH 00 DEGREES 05 MINUTES 54 SECONDS WEST ALONG THE WEST LINE OF SAID LAWNDALE AVENUE, 55.45 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING NORTH 00 DEGREES 05 MINUTES 54 SECONDS WEST ALONG SAID LAWNDALE AVENUE, 196.84 FEET; THENCE SOUTH 89 DEGREES 45 MINUTES 30 SECONDS WEST, 246.53 FEET; THENCE NORTH 01 DEGREES 22 MINUTES 52 SECONDS EAST, 9.54 FEET; THENCE SOUTH 89 DEGREES 45 MINUTES 30 SECONDS WEST, 207.20 FEET; THENCE SOUTH 01 DEGREE 40 MINUTES 46 SECONDS WEST, 213.10 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 13 SECONDS EAST, 387.13 FEET; THENCE NORTH 00 DEGREES 07 MINUTES 32 SECONDS WEST, 7.30 FEET; THENCE NORTH 89 DEGREES 37 MINUTES 29 SECONDS EAST, 72.97 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

EXHIBIT D

That part of the Northeast Quarter of Section 2, Township 38 North, Range 12 East of the Third Principal Meridian, bounded and described as follows: Commencing at the intersection of the North line of 43rd Street (33 feet wide) and the West line of Lawndale Avenue (66 feet wide); Thence North 00° 05' 54" West along the West line of said Lawndale Avenue, 252.29 feet to the point of beginning; Thence continuing North 00° 05' 54" West along said Lawndale Avenue, 406.86 feet; Thence continuing North 18° 35' 03" West, along said Lawndale Avenue, 242.53 feet; Thence North 71° 24' 57" East, 21.00 feet; Thence North 18° 35' 03" West, 180.20 feet; Thence South 71° 24' 57" West, 21.00 feet to the Westerly line of said Lawndale Avenue; Thence North 18° 35' 03" West along said Westerly line, 63.44 feet to the Southwesterly line of Ogden Avenue; Thence South 55° 09' 56" West along said Southwesterly line of Ogden Avenue, 344.20 feet; Thence continuing North 84° 53' 04" West along the Southerly line of said Ogden Avenue, 432.54 feet; Thence South 07° 28' 23" East, 518.67 feet; Thence South 61° 39' 25" East, 395.43 feet; Thence North 89° 45' 30" East, 207.20 feet; Thence South 01° 22' 52" West, 9.54 feet; Thence North 89° 45' 30" East, 246.53 feet to the West line of said Lawndale Avenue and the point of beginning, in Cook County, Illinois.

APPENDIX D

COPY OF HISTORCIAL RECORDS

Illinois Natural Resources Geospatial Data Clearinghouse – www.isgs.uiuc.edu – 1939

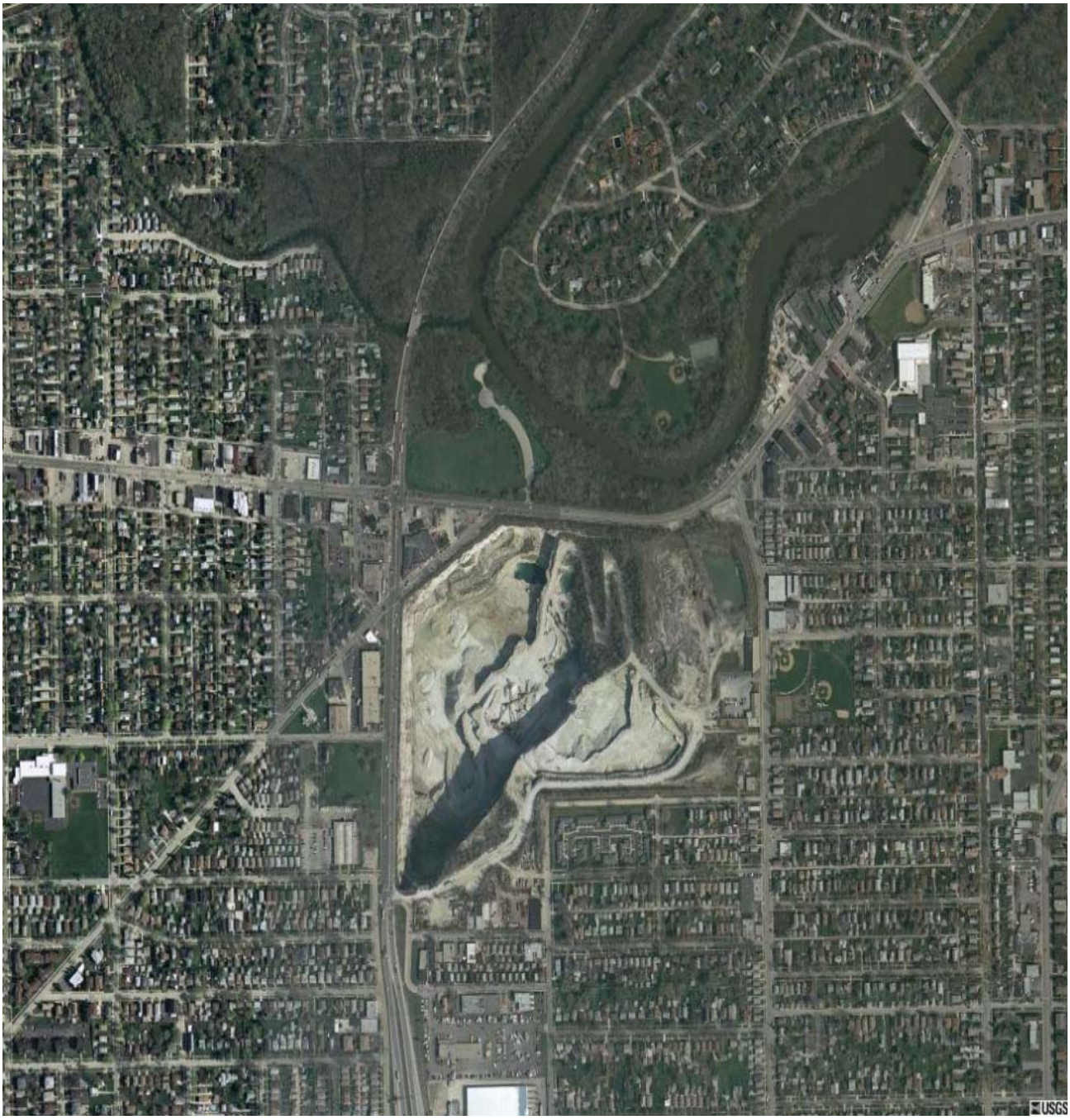
Environmental Data Resources, Inc. (EDR®) Aerial Photo Decade Package – 1951

EDR® Aerial Photo Decade Package – 1962

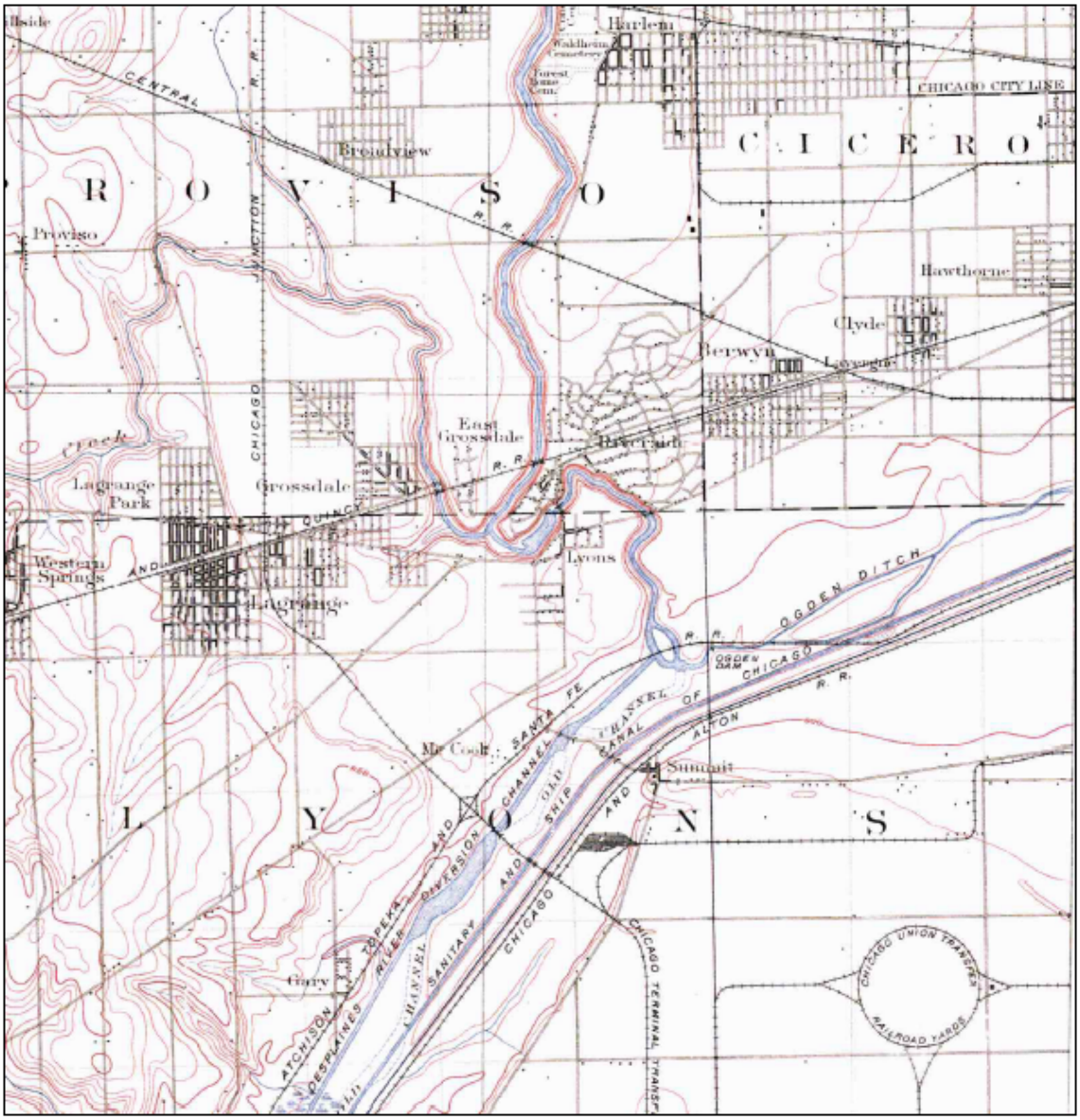
EDR® Aerial Photo Decade Package – 1988

EDR® Aerial Photo Decade Package – 1993

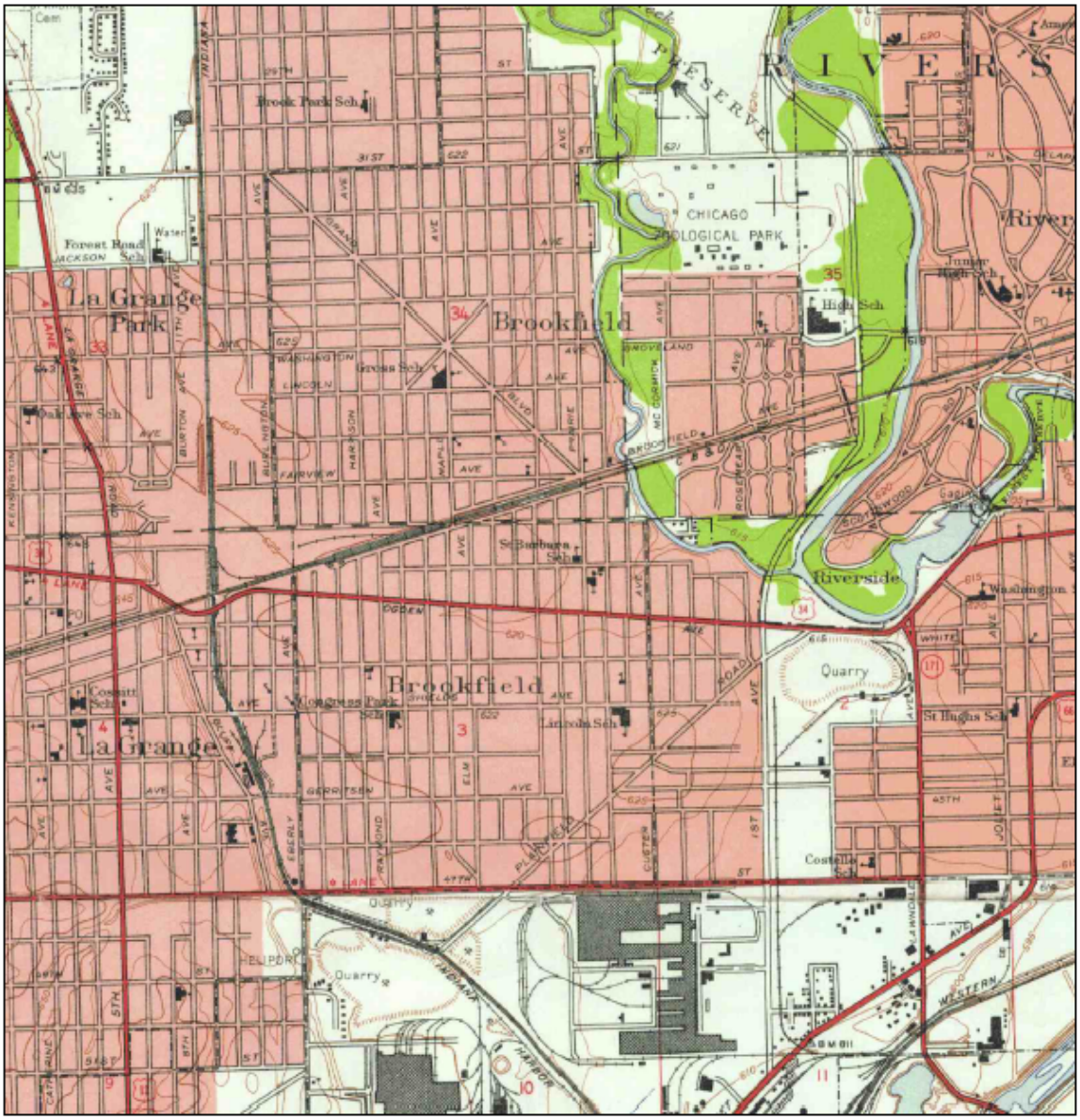
TerraServerUSA – www.terraserver-usa.com – 1998



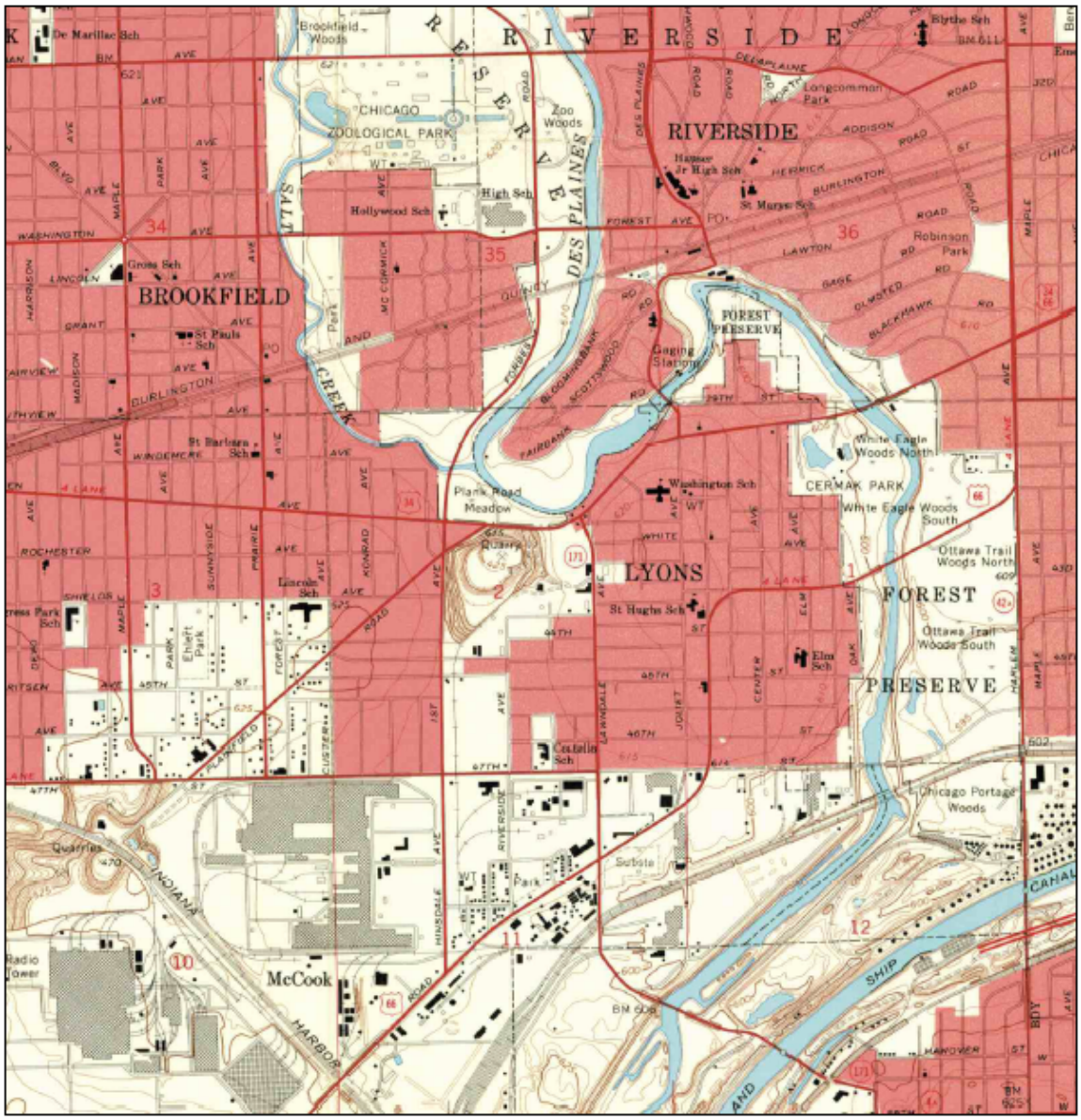
TerraServerUSA – www.terraserver-usa.com – 2002



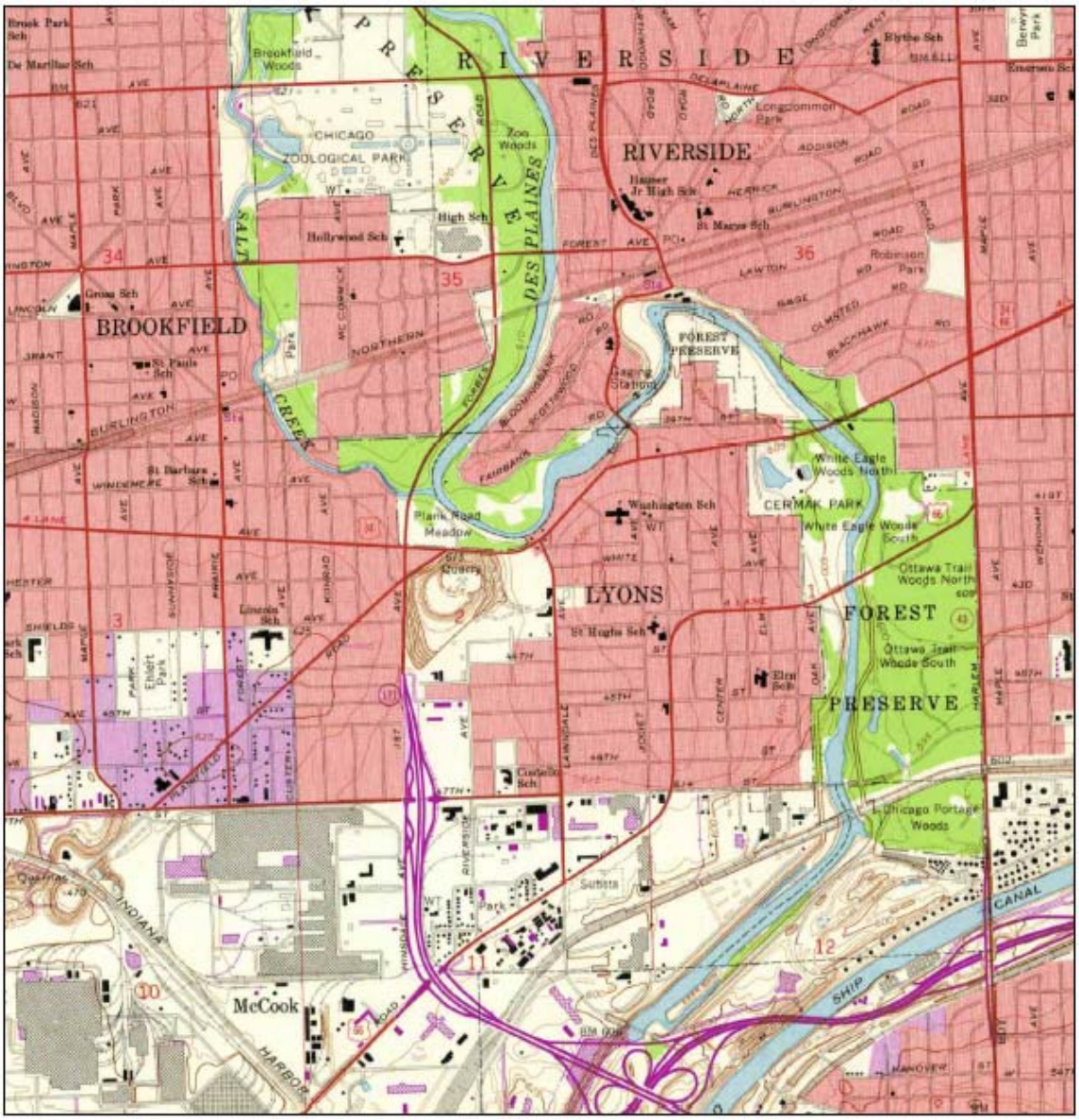
EDR® Historical Topographic Map Report – 1901



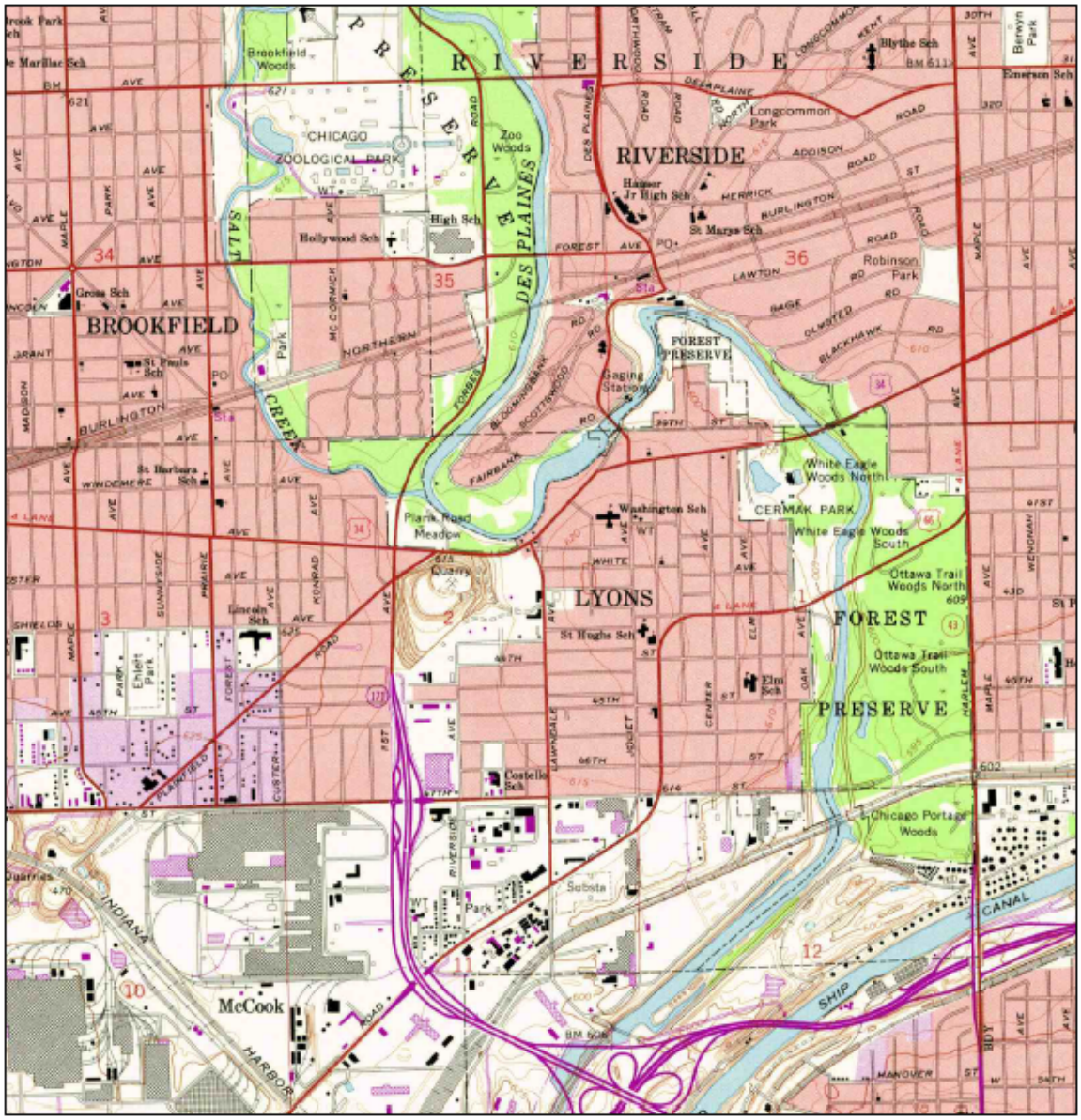
EDR® Historical Topographic Map Report – 1953



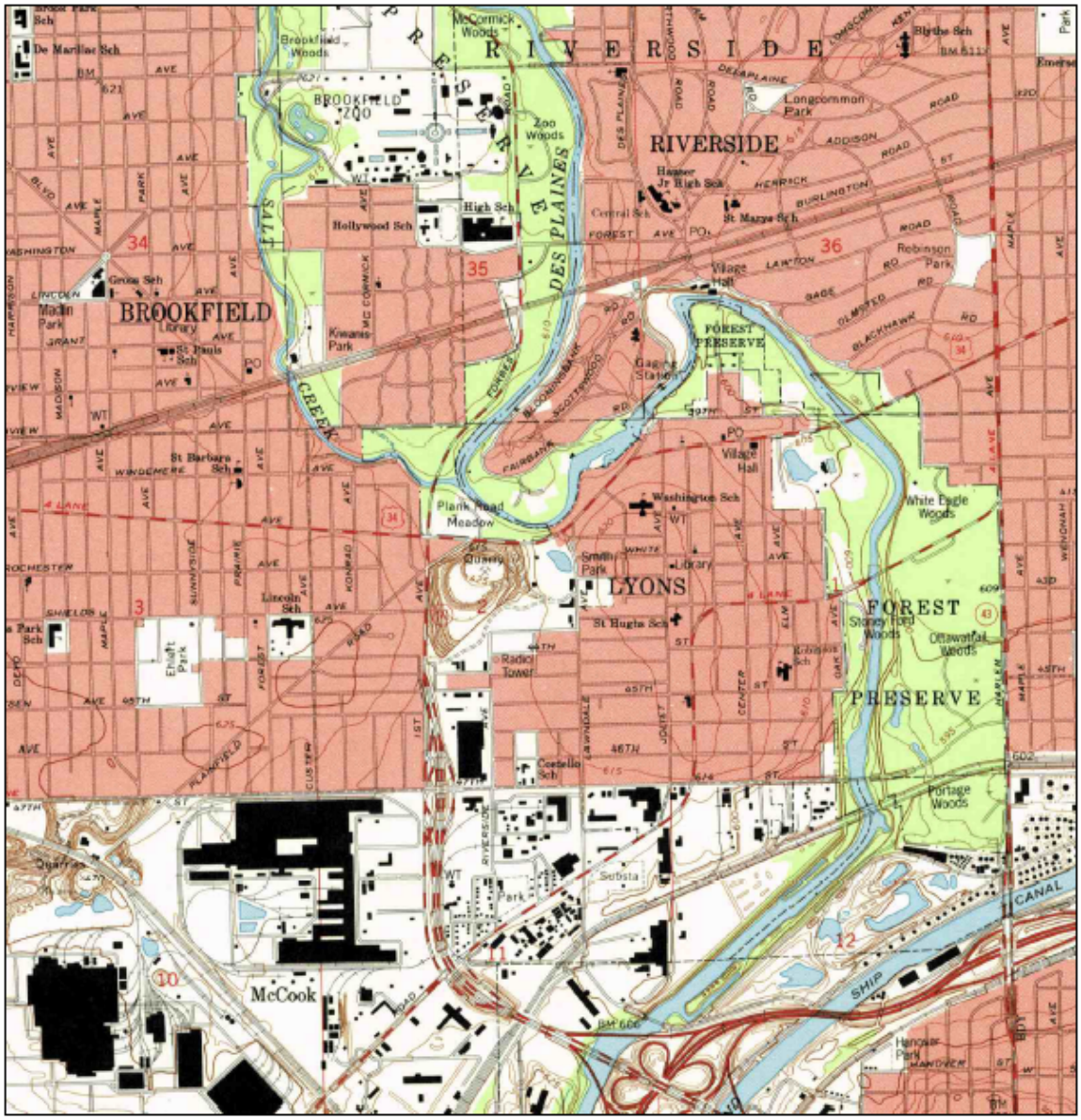
EDR® Historical Topographic Map Report – 1963



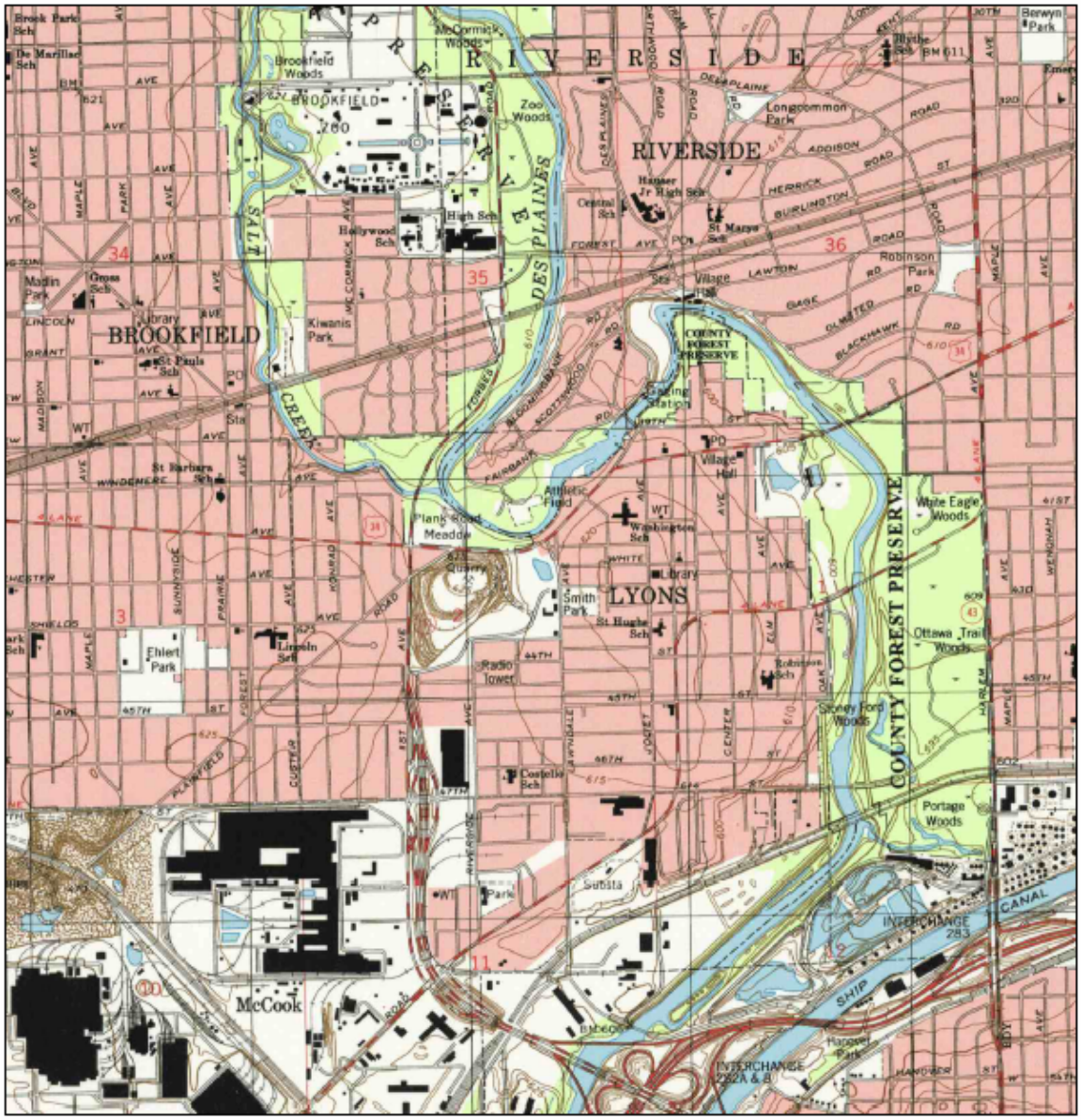
EDR® Historical Topographic Map Report – 1972



EDR® Historical Topographic Map Report – 1980



EDR® Historical Topographic Map Report – 1993



EDR® Historical Topographic Map Report – 1998

The EDR-City Directory
Abstract

Village of Lyons Property
4226 Lawndale Avenue
Lyons, IL 60534

Inquiry Number: 2062274.6

Wednesday, October 31, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1977 through 2005. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: October 31, 2007

Target Property:
4226 Lawndale Avenue
Lyons, IL 60534

Year	***Uses***	***Source***
1977	No Return	Haines Criss-Cross Directory
1990	No Return	Haines Criss-Cross Directory
2005	Street Not Listed in Research Source	Haines Criss-Cross Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
Lyons, IL 60534

Year	***Uses***	***Source***
1977	*Lawndale Ave*	Haines Criss-Cross Directory
	Electrical Engr Equip (4215)	Haines Criss-Cross Directory
	No Return (4217)	Haines Criss-Cross Directory
	Federal Asphalt Crp (4220)	Haines Criss-Cross Directory
	Lyons Electric Co (4225)	Haines Criss-Cross Directory
	Residence (4301)	Haines Criss-Cross Directory
	Address not listed in research source (4305)	Haines Criss-Cross Directory
	Residence (4307)	Haines Criss-Cross Directory
1990	*Lawndale Ave*	Haines Criss-Cross Directory
	Office Building (4215)	Haines Criss-Cross Directory
	No Return (4217)	Haines Criss-Cross Directory
	Lyons Electric Co (4225)	Haines Criss-Cross Directory
	Residence (4301)	Haines Criss-Cross Directory
	No Return (4305)	Haines Criss-Cross Directory
	Residence (4307)	Haines Criss-Cross Directory

Year	***Uses***	***Source***
2005	Street Not Listed in Research Source	Haines Criss-Cross Directory

Certified Sanborn® Map Report

Sanborn® Library search results
Certification # A422-4A01-9F45

Village of Lyons Property
4226 Lawndale Avenue
Lyons, IL 60534

Inquiry Number 2062274.3s

October 26, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

10/26/07

Site Name:
Village of Lyons Property
4226 Lawndale Avenue
Lyons, IL 60534

EDR Inquiry # 2062274.3s

Client Name:
Bradburne, Briller & Johnson
515 North State St.
CHICAGO, IL 60610-0000

Contact: Kevin McCartney

EDR® Environmental Data Resources Inc

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Certified Sanborn Results:

Site Name: Village of Lyons Property
Address: 4226 Lawndale Avenue
City, State, Zip: Lyons, IL 60534
Cross Street:
P.O. # NA
Project: NA
Certification # A422-4A01-9F45

Maps Identified - Number of maps indicated within "( )"

1975 (3)
1951 (3)
1930 (3)

Total Maps: 9

Sanborn® Library search results
Certification # A422-4A01-9F45

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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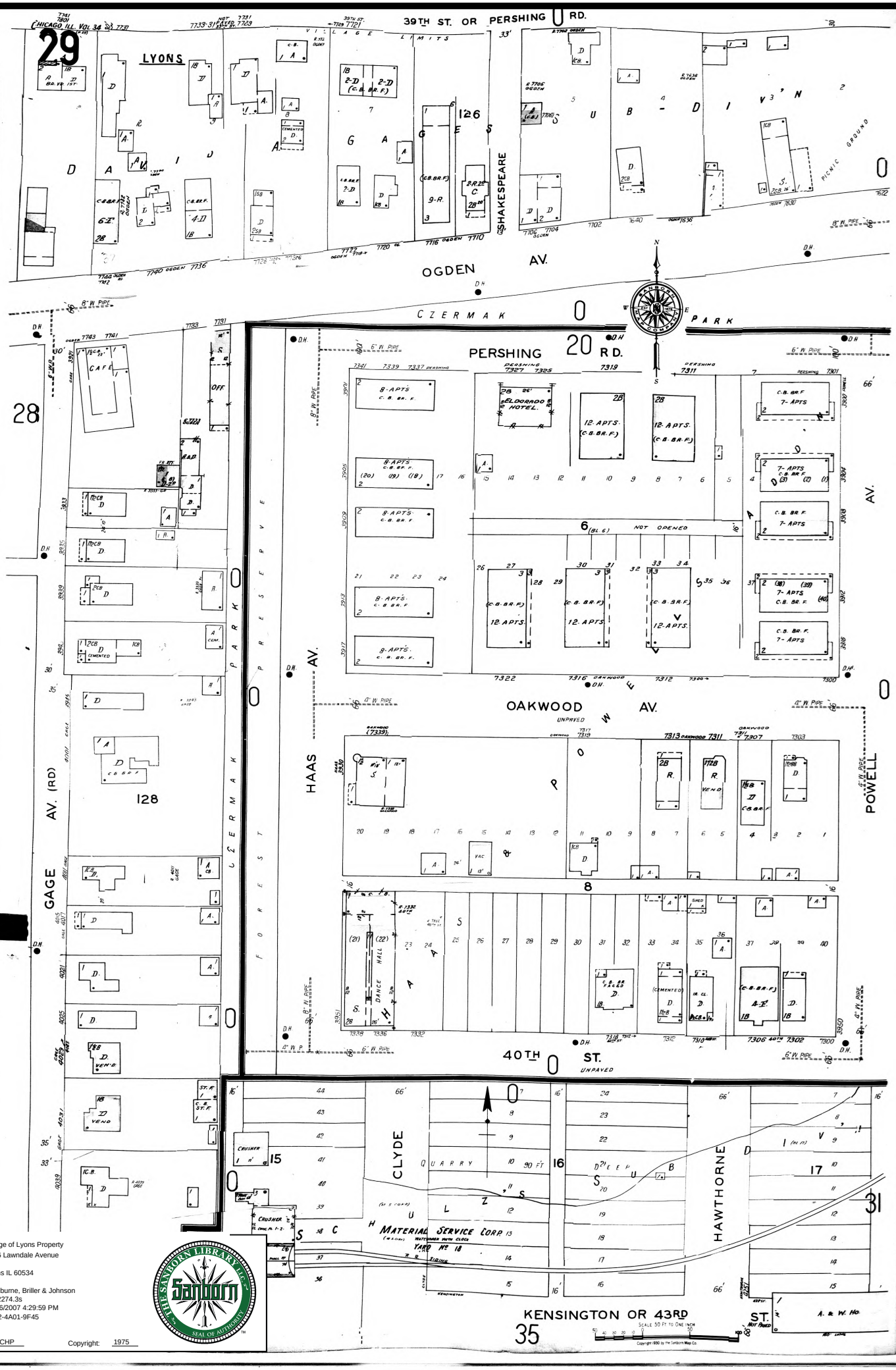

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Site Name:	Village of Lyons Property
Address:	4226 Lawndale Avenue
City, ST, ZIP:	Lyons IL 60534
Client:	Bradburne, Briller & Johnson
EDR Inquiry:	2062274.3s
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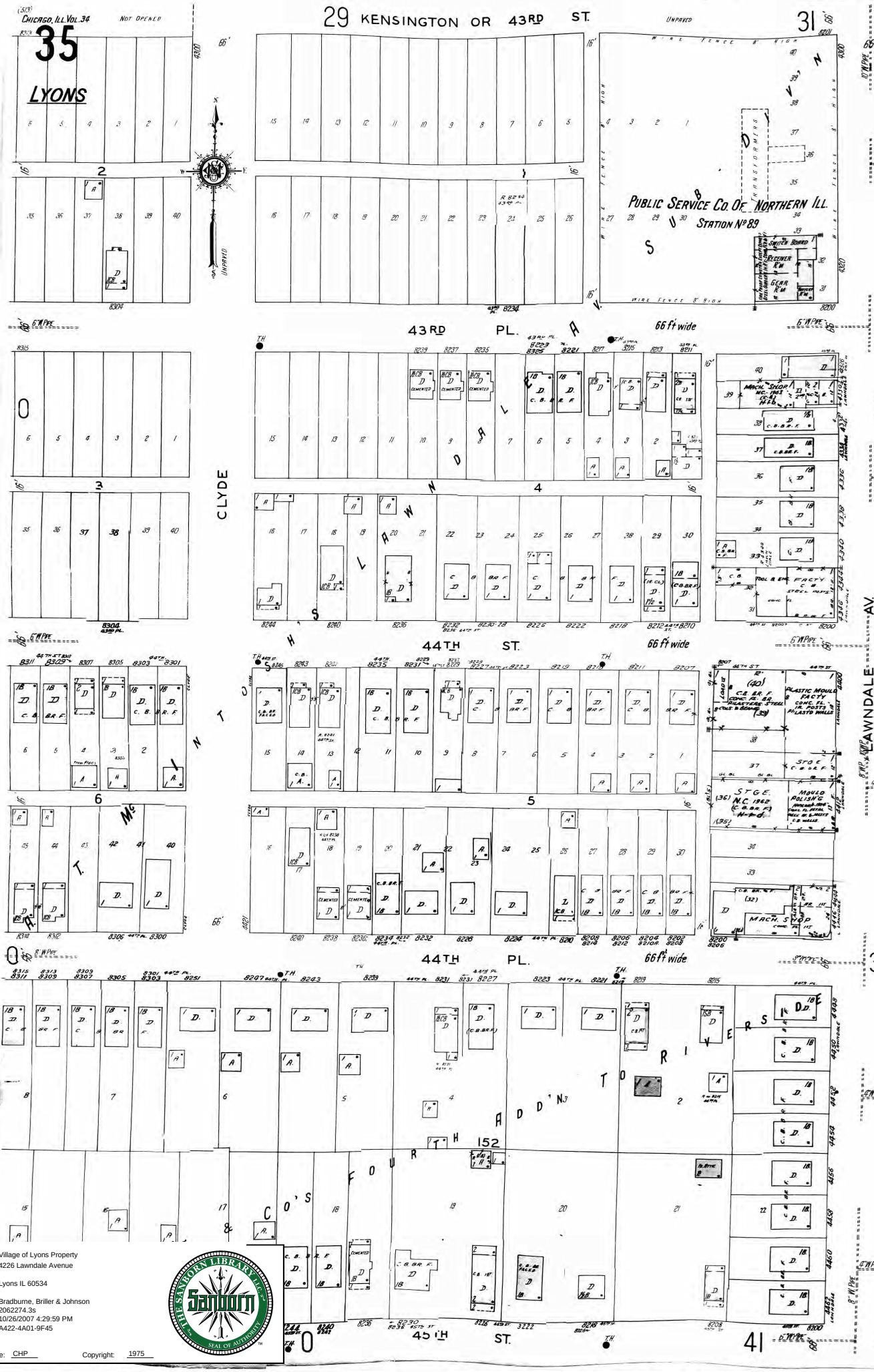
Certification #	A422-4A01-9F45

Research Associate: CHP Copyright: 1975



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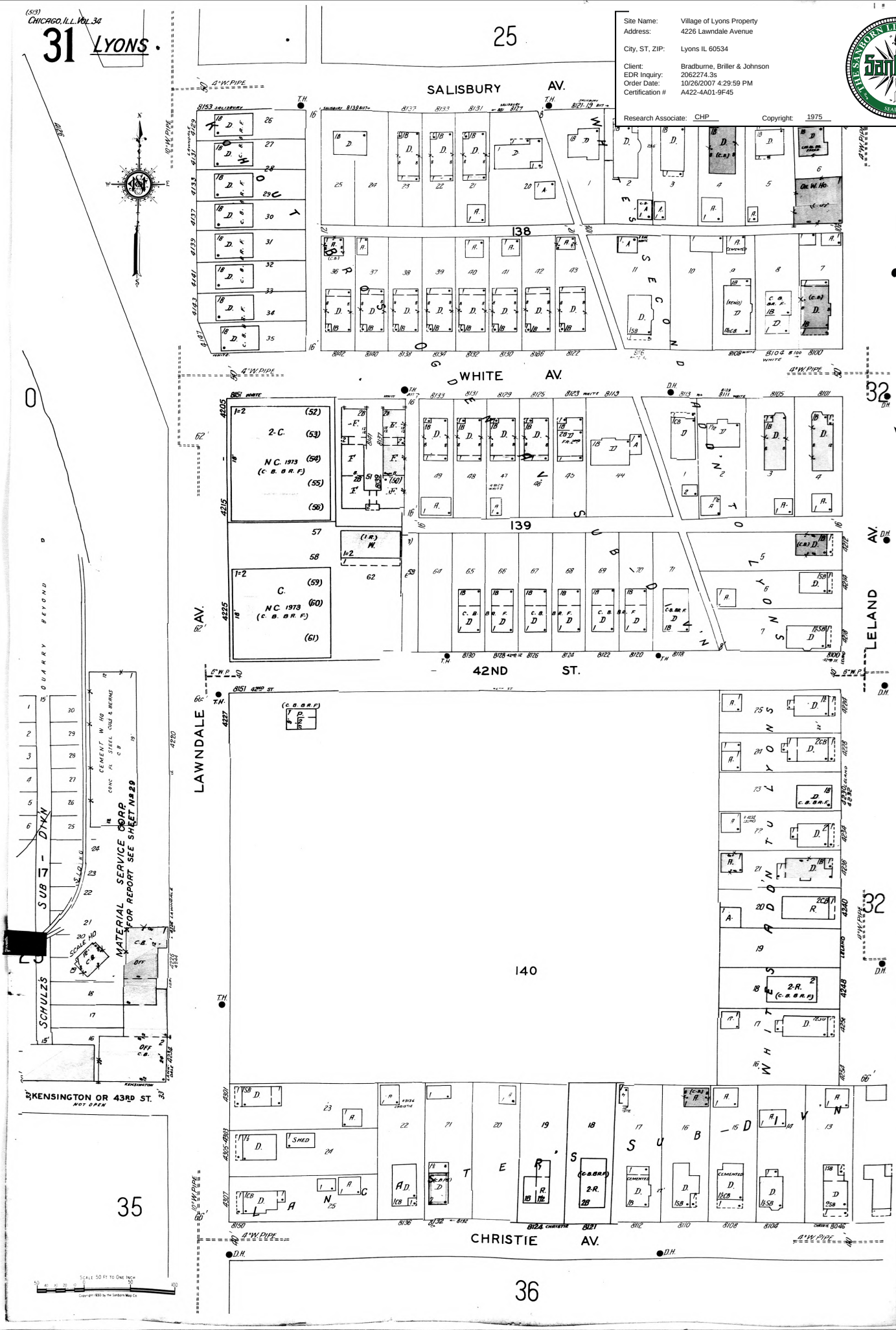
Certification # A422-4A01-9F45
Research Associate: CHP
Copyright: 1975



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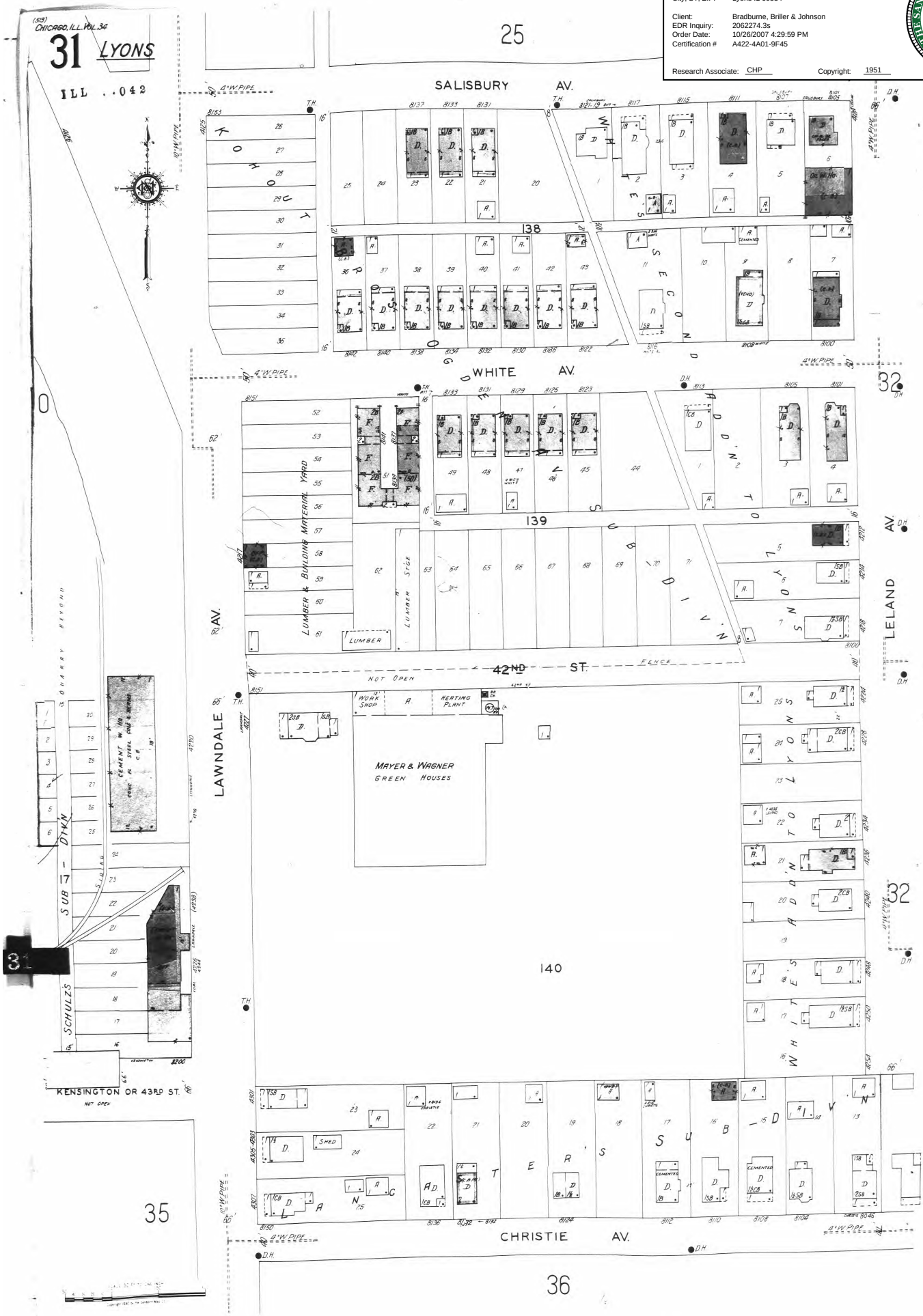
Client: Bradburne, Briller & Johnson
EDR Inquiry: 2062274.3s
Order Date: 10/26/2007 4:29:59 PM
Certification # A422-4A01-9F45
Research Associate: CHP
Copyright: 1951



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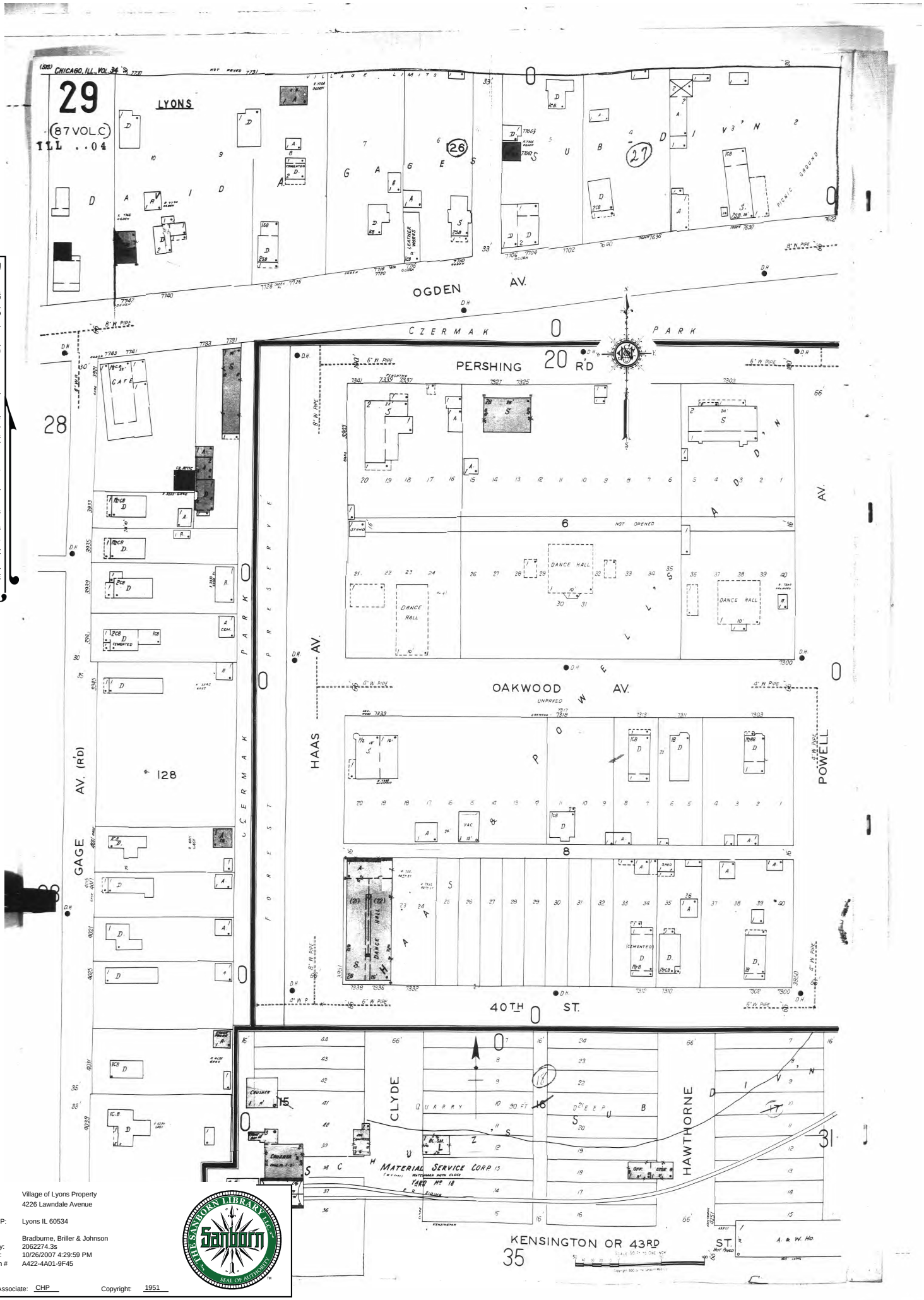

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Client:	Bradburne, Briller & Johnson
EDR Inquiry:	2062274.3s
Order Date:	10/26/2007 4:29:59 PM
Certification #	A422-4A01-9F45

Research Associate: CHP Copyright: 1951

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Certification #	A422-4A01-9F45

Research Associate: CHP Copyright: 1951

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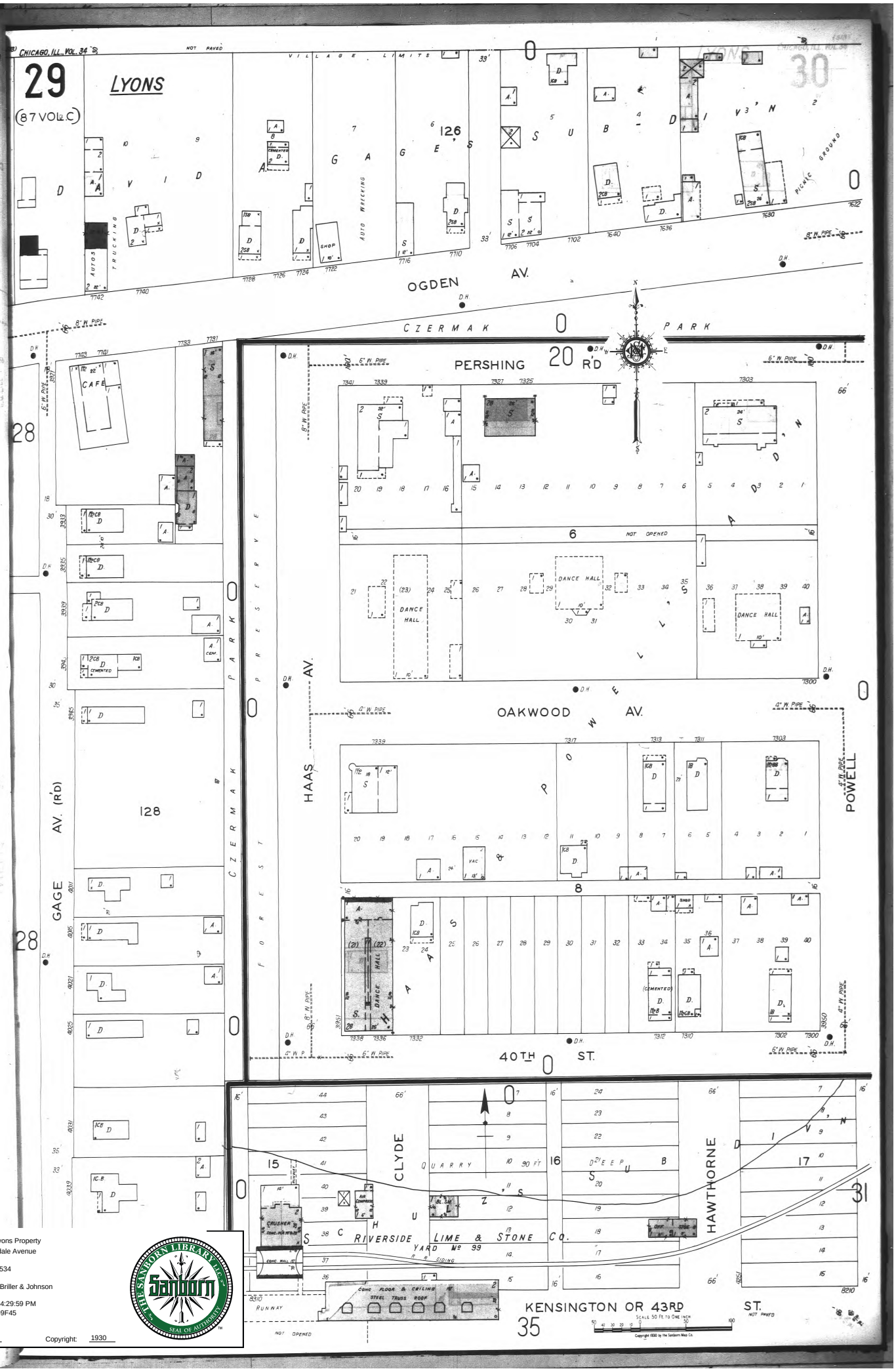
Certification # A422-4A01-9F45



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Address:	4226 Lawndale Avenue
City, ST, ZIP:	Lyons IL 60534
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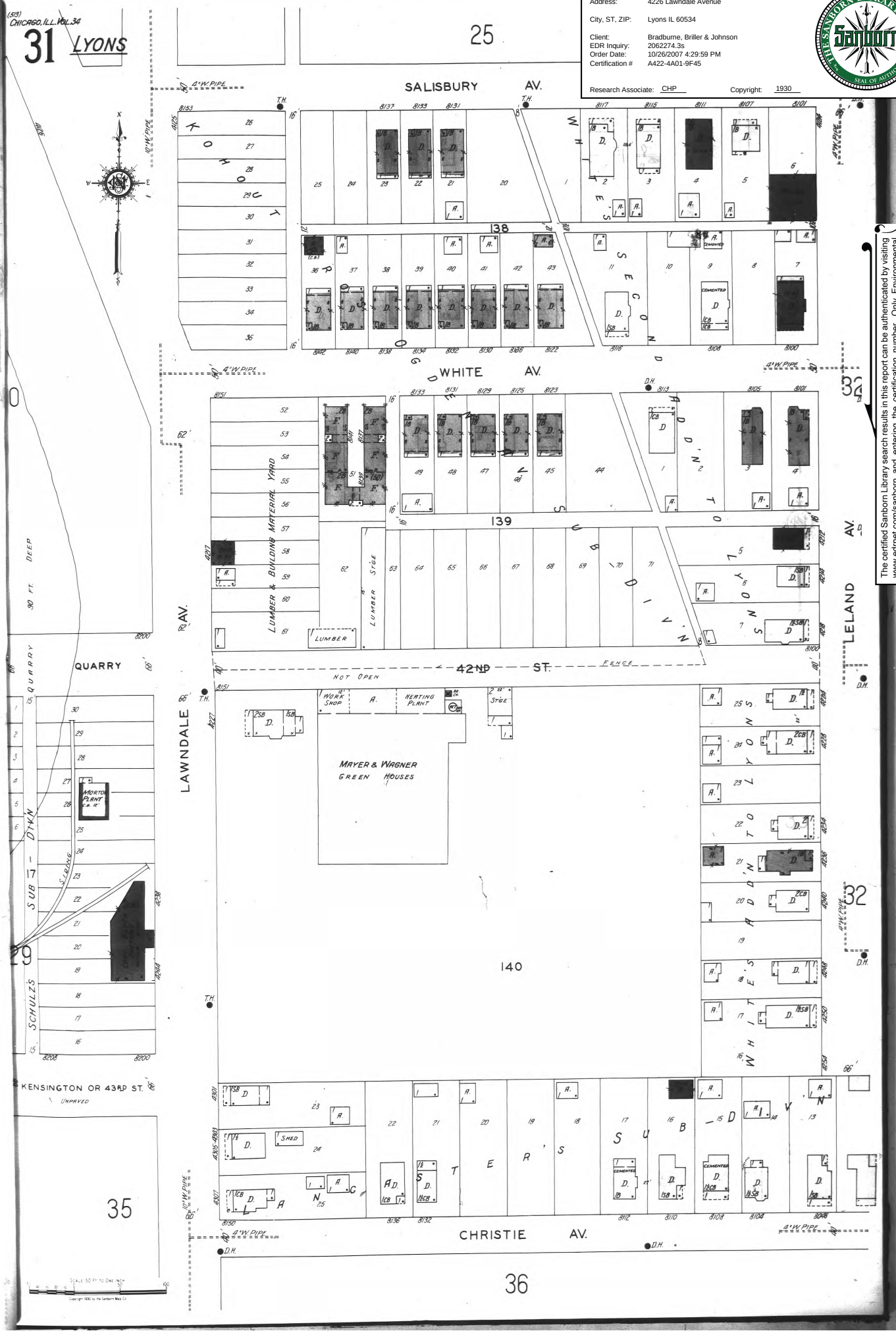
EDR Inquiry:	2062274.3s
Order Date:	10/26/2007 4:29:59 PM
Certification #	A422-4A01-9F45
Research Associate:	CHP
Copyright:	1930

Site Name: Village of Lyons Property
Address: 4226 Lawndale Avenue
City, ST, ZIP: Lyons IL 60534
Client: Bradburne, Briller & Johnson
EDR Inquiry: 2062274.3s
Order Date: 10/26/2007 4:29:59 PM
Certification # A422-4A01-9F45
Research Associate: CHP
Copyright: 1930



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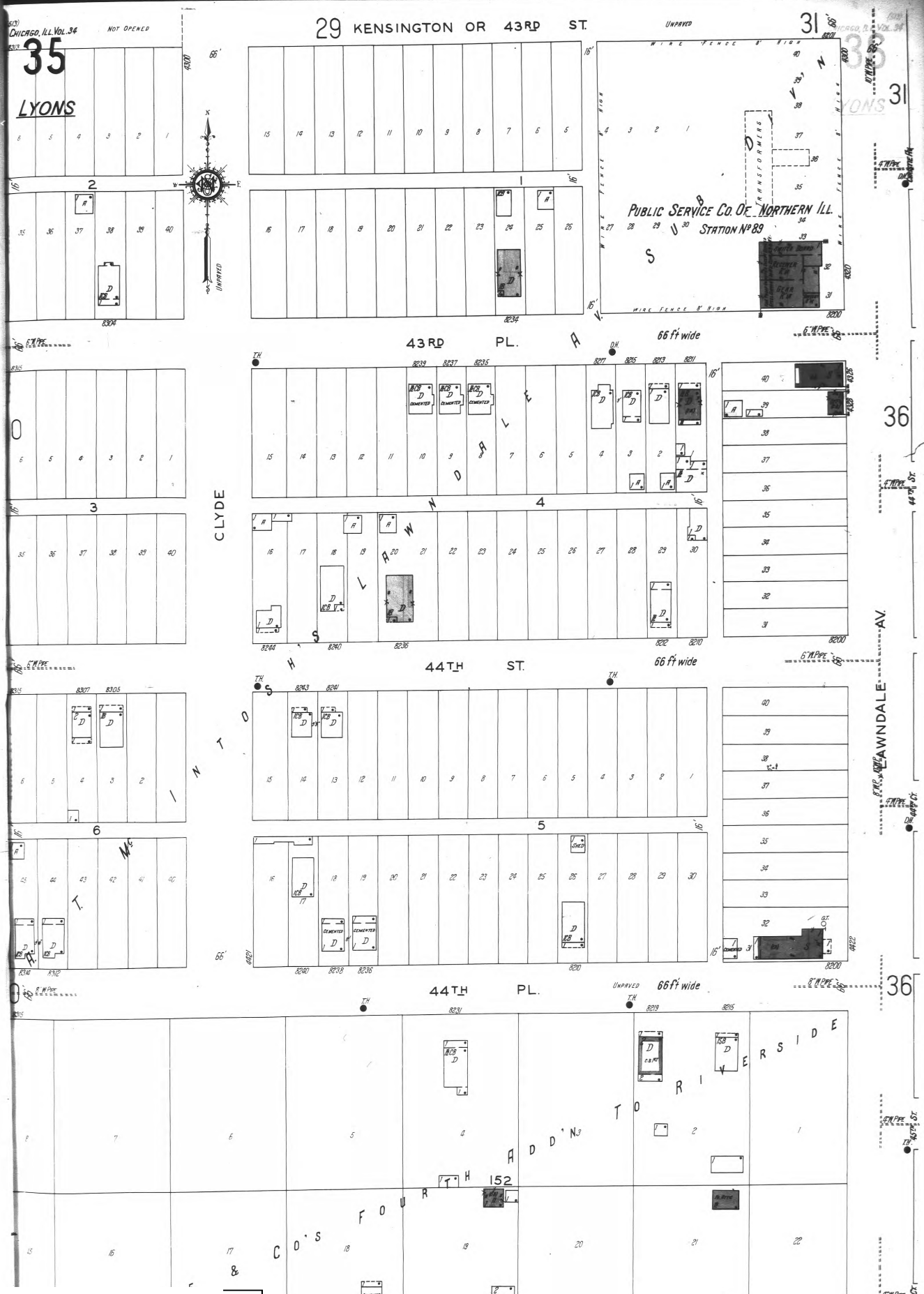

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Research Associate: CHP Copyright: 1930

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APPENDIX E

RESUMES

J. TIM BRADBURNE, P.G.
Principal

EDUCATION AND PROFESSIONAL REGISTRATION

B.S., Geology, Virginia Polytechnic Institute and State University, 1983
Contaminant Hydrogeology - Domenico, Freeze, Schwartz and Smith, 1989
Professional Geologist in Georgia and Missouri

PROFESSIONAL MEMBERSHIPS & ASSOCIATIONS

Association of Ground-Water Scientists and Engineers
Associated Industries of Missouri
National Water Well Association

CAREER SUMMARY

Mr. Bradburne has been providing environmental consulting services and working in the geologic sciences for more than 16 years. In 1982, he was responsible for conducting field geologic mapping in the Appalachian Mountains at Virginia Polytechnic Institute and State University's (VPI & SU) Saltville, Virginia Field Camp. Shortly thereafter, he began working with Law Engineering and Environmental Services, Inc. (LAW) providing clients with environmental and geological engineering consulting services. Mr. Bradburne, along with several colleagues, resigned from LAW in February 1997 and formed Bradburne, Briller & Johnson, LLC (BB&J), an information management, environmental and engineering consulting firm where he currently serves as a Project Director in its Chicago branch.

Typical Client Markets

Clients for which Mr. Bradburne has provided services represent a diverse group of businesses. Some of the client markets with which he has significant experience include:

- Agricultural
- Airlines
- Airports
- Architect Firms
- Asset Management
- Automotive
- Brownfield Redevelopment
- Chemicals
- Communications
- Construction
- Containers
- Dry Cleaning
- Electronics
- Fabrication
- Federal Governments
- Financial
- Food and Beverages
- Glass Production
- Health Care
- Hospitality
- Information Services
- Institutional
- Insurance
- Law Firms
- Lead Production
- Local Governments
- Manufacturing and Assembly
- Marinas
- Medical Products
- Mining
- Ordnance
- Paints and Coatings
- Petroleum Retail Marketing
- Pharmaceuticals
- Pollution Control
- Printing
- Pulp and Paper
- Refining/Petrochemicals
- Retail
- Semiconductors
- State Governments
- Steel Production
- Transportation and Shipping
- Utilities
- Wood Preserving

J. TIM BRADBURNE, P.G.
Principal

Geographical Areas of Expertise

Mr. Bradburne has provided his services to clients with sites across the United States and abroad. His experience includes work in the following locations:

- Alabama
- Arizona
- Arkansas
- California
- Canada
- Colorado
- Connecticut
- Florida
- Georgia
- Idaho
- Illinois
- Indonesia
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Mexico
- Puerto Rico
- Mississippi
- Missouri
- Nebraska
- Nevada
- New Jersey
- New Mexico
- New York
- North Carolina
- Ohio
- Oklahoma
- British Virgin Islands
- Oregon
- Pennsylvania
- South Carolina
- South Dakota
- Tennessee
- Texas
- Virginia
- Washington
- West Virginia
- Wisconsin
- U.S. Virgin Islands

Technical Experience Overview

Over the course of his career, Mr. Bradburne has provided clients with a broad range of environmental and geologic consulting services. His technical responsibilities have included numerous staff, project and senior level positions for clients in the following areas:

- Assessments (Sampling and Analyses)
- Brownfield Investigations and Cleanup
- Building Decommissioning/Bid Specifications
- CERCLA Emergency Response Action
- Commercial Property Redevelopment
- Community Right To Know/EPCRA
- Compliance Audits
- Due Diligence (Phase Is, IIs, and IIIs)
- Environmental Management Systems
- Federal Superfund Site RIs/FSs
- Hazardous Waste Management
- Hydrogeology
- Industrial and Commercial Facility Siting
- Industrial Property Redevelopment
- Nonpoint Source Pollution Control
- Opinions of Costs
- Permitting (Air, Land, Water, and Waste)
- Planning (Air, Land, Water, and Waste)
- Pollution Prevention/Waste Minimization
- Pumped Hydro Storage Facility Siting
- RCRA Facility Closures
- Regulatory Strategy and Negotiations
- Relational Database Development
- Remedial Action Design and Implementation
- Risk Assessments/Risk-Based Closure
- Solid Waste
- State Superfund Investigation/Remedial Action
- Stormwater
- Training
- TSCA (Asbestos and PCBs)
- USTs, ASTs and Pipelines
- Voluntary Cleanup
- Water Quality
- Water Supply

J. TIM BRADBURNE, P.G.
Principal

CAREER HISTORY

The career history of Mr. Bradburne includes numerous technical and management positions. A summary is provided as follows:

2/97 to Present –	Bradburne, Briller & Johnson, LLC, Chicago, IL	• Project Director • Environmental and Engineering Group Leader • National Account Manager (i.e., accounts $1M or more) • Board of Advisors
10/94 to 02/97 –	LAW, Itasca, IL	• Principal • Midwest Region Industrial Environmental Mgr • National Account Manager (i.e., accounts $2M or more)
01/92 to 10/94 –	LAW, St. Louis, MO	• Principal • Branch Manager • National Account Manager (i.e., accounts $2M or more)
01/90 to 01/92 –	LAW, Jackson, MS	• Principal • Senior Geologist • Program Manager • National Account Manager (i.e., accounts $2M or more)
01/89 to 01/90 –	LAW, Kennesaw, GA	• Senior Geologist • Special Projects Department Manager • National Account Manager (i.e., accounts $2M or more)
01/88 to 01/89 –	LAW, Kennesaw, GA	• Project Manager • Hydrogeologic Assessments Department Mgr • National Account Mgr (i.e., accounts $1M or more)
01/87 to 01/88 –	LAW, Kennesaw, GA	• Project Geologist • UST Assessments Department Manager • National Account Manager (i.e., accounts $1M or more)
06/84 to 01/87 –	LAW, Marietta, GA	• Staff Hydrogeologist • Staff Geologist
06/82 to 08/82 –	VPI & SU, Saltville, VA	• Field Geologist • Field Camp Student

ANDREW W. BAJORAT, CHMM
Senior Scientist

EDUCATION AND PROFESSIONAL REGISTRATION

M.S., Environmental Science, Indiana University, 1998
B.A., Chemistry, Augustana College, 1996
Certified Hazardous Materials Manager
OSHA 40-hour Hazwoper Training

CAREER SUMMARY

Mr. Bajorat has worked in various aspects of the environmental industry for more than 6 years. In 1995, Mr. Bajorat served as an intern to the Illinois Riverwatch Network and was responsible for evaluating the health of tributaries to the Mississippi River by collecting and identifying macroinvertebrate larvae found in the tributaries. In 1997, Mr. Bajorat managed household hazardous waste and septic system management informational campaigns for the McHenry County Defenders, a non-profit organization. Mr. Bajorat has provided a wide range of environmental consulting services to clients since 1997 while working with J.M Stratta and Associates in 1997 and 1998; Tetra Tech EM, Inc. in 1998 through 2000; and Bradburne, Briller & Johnson, LLC (BB&J) from August 2000 to the present where he currently serves as the Chicago Branch Manager and a senior scientist.

Typical Client Markets

Clients for whom Mr. Bajorat has provided services represent a diverse group of businesses. Some of the client markets with which he has significant experience include:

- Agricultural
- Automotive
- Brownfield Redevelopment
- Chemicals
- Communications
- Construction
- Electronics
- Fabrication
- Federal Governments
- Financial
- Food and Beverages
- Information Services
- Institutional
- Insurance
- Law Firms
- Local Governments
- Manufacturing and Assembly
- Marinas
- Military
- Non-profit
- Petroleum Retail Marketing
- Pollution Control
- Refining/Petrochemicals
- State Governments
- Steel Production
- Transportation and Shipping
- Tribal Governments
- Utilities

Geographical Areas of Expertise

Mr. Bajorat has provided his services to clients with sites across the United States and internationally. His experience includes work in the following locations:

- Arizona
- California
- Colorado
- Florida
- Georgia
- Illinois
- Indiana
- Iowa
- Kentucky
- Maryland
- Mexico
- Michigan
- Minnesota
- Mississippi
- Montana
- Missouri
- Nebraska
- New Jersey
- New York
- North Carolina
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Puerto Rico
- South Carolina
- Texas
- Tennessee
- United Kingdom
- Utah
- West Virginia
- Wisconsin

ANDREW W. BAJORAT, CHMM
Senior Scientist

Technical Experience Overview

Over the course of his career, Mr. Bajorat has provided clients with a broad range of environmental, information management and geologic consulting services. His technical responsibilities have included staff and project management level positions for clients in the following areas:

- Assessments (Sampling and Analyses)
- Brownfield Investigations and Cleanup
- Building Decommissioning/Bid Specifications
- CERCLA Emergency Response Action
- Chemical Fate and Transport Studies
- Commercial Property Redevelopment
- Community Right To Know/EPCRA
- Data Validation
- Due Diligence (Phase Is, IIs, and IIIs)
- Federal Superfund Remediation
- Federal Superfund Site RIs/FSs
- Hazardous Waste Management
- Hydrogeology
- Industrial Property Redevelopment
- Laboratory Audits
- NEPA Compliance
- Permitting (Air, Land, Water, and Waste)
- Planning (Air, Land, Water, and Waste)
- RCRA Facility Closures
- RCRA Enforcement
- Regulatory Strategy and Negotiations
- Remedial Action Design and Implementation
- Risk Assessments/Risk-Based Closure
- State Superfund Investigation/Remedial Action
- TSCA (Asbestos and PCBs)
- USTs, ASTs and Pipelines
- Voluntary Cleanup
- Water Quality

CAREER HISTORY

The career history of Mr. Bajorat includes numerous technical and management positions. A summary is provided as follows:

8/00 to Present –	Bradburne, Briller & Johnson, LLC, Chicago, IL	• Senior Scientist • Project Management
06/98 to 8/00 –	Tetra Tech, EM Inc., Chicago, IL	• Staff Chemist • Project Management
11/97 to 5/98 –	J.M. Stratta and Associates, Columbus, IN	• Intern / Researcher
05/97 to 08/97 –	McHenry County Defenders, Woodstock, IL	• Intern
05/95 to 05/96 –	Illinois Riverwatch Network, Moline, IL	• Intern / Field Scientist

Michele L. Hargreaves
Staff I Scientist

EDUCATION AND PROFESSIONAL REGISTRATION

B.S., Environmental Science, DePaul University, 2004
OSHA 40-hour Hazwoper Training

CAREER SUMMARY

Ms. Hargreaves has worked in the environmental industry for 1 year. Since joining Bradburne, Briller & Johnson, LLC (BB&J) in 2006, Ms. Hargreaves has provided environmental consulting services, including due diligence for several clients.

Typical Client Markets

Clients for whom Ms. Hargreaves has provided services represent a diverse group of businesses. Some of the client markets with which she has experience include:

- Telecommunication
- Retail
- Manufacturing
- Industrial

Geographical Areas of Expertise

Ms. Hargreaves has provided her services to clients with sites across the Midwest. Her experience includes work in the following locations:

- Illinois
- Indiana
- Iowa
- Kentucky
- Michigan
- Minnesota
- Missouri
- Montana
- Nevada
- Ohio
- Wisconsin

Technical Experience Overview

Over the course of her career, Ms. Hargreaves has provided clients with a range of environmental, information management and health and safety consulting services. Her technical staff level responsibilities for clients have included the following areas:

- Asbestos Identification
- Assessments (Sampling and Analyses)
- Due Diligence (Phase Is and IIs)
- Lead Based Paint Identification
- NEPA Compliance

CAREER HISTORY

A summary of Ms. Hargreaves' career history is provided as follows:

7/06 to Present – Bradburne, Briller & Johnson, LLC, Chicago, IL

- Staff I Scientist

APPENDIX L

SUMMARY OF PREVIOUS SOIL GAS AND SOIL FLUX SURVEYS

APPENDIX L
SUMMARY OF PREVIOUS SOIL GAS AND FLUX CHAMBER SURVEYS

Bradburne, Briller & Johnson, LLC (BB&J) has performed several soil gas and flux chamber surveys in conjunction with BB&J's previous investigations to assess the potential for subsurface constituents of concern (COCs) at the Subject Property in addition to providing data for a preliminary risk evaluation based upon the proposed uses of the Subject Property at the time of the respective investigations. It should be noted that the Illinois Environmental Protection Agency (IEPA) does not currently have regulations and guidance concerning soil gas sampling methodologies or remediation objectives for soil gas concentrations. Further, the proposed use of the Subject Property has evolved during the course of the previous investigations as proposed uses and the locations of those uses have been revised. Therefore, the conclusions and recommendations based upon the data acquired during these investigations are no longer useful to the degree to when the reports were originally prepared.

As summarized below, the following are the investigations completed by BB&J that contain information regarding soil gas and flux chamber surveys:

- *Report of Limited and Preliminary Soil Gas Investigation*, prepared by BB&J, for the Village of Lyons, dated February 23, 2007 (BB&J 2007 Preliminary Soil Gas Investigation) (Included within this Appendix);

- *Report of Phase II Environmental Site Assessment, Strategy and Sampling – Commercial Development*, prepared by BB&J, for the Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Commercial Development) (See Appendix H);

- *Report of Phase II Environmental Site Assessment, Future Use Evaluation*, prepared by BB&J, for Village of Lyons, dated June 13, 2007 (BB&J Phase II ESA: Future Use) (See Appendix I); and,

- *Report of Phase II Environmental Site Assessment, Strategy and Sampling – Community Center*, prepared by BB&J, for the Village of Lyons, dated June 26, 2007 (BB&J Phase II ESA: Community Center) (See Appendix J).

1.0 SITE-SPECIFIC SAMPLING PLAN

1.1 BB&J Investigations

The sampling procedures utilized during BB&J's investigations were conducted in accordance with the scope of work outlined in BB&J's proposals PN6-0296, PN7-0109, PN7-0117, PN7-0136 and have been incorporated into the Site-Specific Sampling Plan. The information below provides a detailed description of BB&J's sampling activities with respect to soil gas and flux chamber surveys at the Subject Property.

1.1.1 BB&J Preliminary Soil Gas Investigation

The sampling procedures utilized during the BB&J Preliminary Soil Gas Investigation are summarized below. Detailed sampling procedures are documented in the BB&J Preliminary Soil Gas Investigation, which are included herein.

The BB&J Preliminary Soil Gas Investigation was conducted to determine the potential for subsurface COCs to be present associated with the historical filling operations focused primarily within the central and western portions of the Subject Property. Since the specific origin of the fill material used to fill the former quarry (Former Quarry) was unknown beyond the fill material consisting of clean construction and demolition debris (CCDD) material[1] (Former CCDD Fill Operation), BB&J conducted a preliminary soil gas investigation to determine the potential presence of COCs. The BB&J Preliminary Soil Gas Investigation included an evaluation of the potential COCs regarding a proposed residential development located throughout the central portion of the Subject Property, as well as a proposed municipal community center located along the south-central portion of the Subject Property.

The scope of work included the collection of a total of 15 soil gas samples collected from primarily throughout the central portion of Subject Property within the subsurface of the proposed residential town homes development and the proposed community center. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted to H&P Mobile GeoChemistry[2] (H&P Laboratory) for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method TO-15 and methane by USEPA Method 8015B.

1.1.2 BB&J Phase II ESA: Commercial Development

The sampling procedures utilized during the BB&J Phase II ESA: Commercial Development are summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Commercial Development, which are included as Appendix H.

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted near the north edge of the Former Quarry / Former CCDD Fill Operation.

During this investigation, BB&J conducted a second limited soil gas survey from three locations within the proposed commercial buildings on the north portion of the Subject Property. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B.

1.1.3 BB&J Phase II ESA: Future Use

The sampling procedures utilized during the BB&J Phase II ESA: Future Use is summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Future Use, which are included as Appendix I.

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation. During this investigation, BB&J collected three soil gas samples from the southeastern portion of the Subject

[1] CCDD fill can include one or all of the following; brick, rock, stone, reclaimed asphalt pavement, uncontaminated soil and/or concrete.
[2] H&P maintains National Environmental Laboratory Accreditation Program (NELAP) certification which is recognized in Illinois.

Property at the time of this investigation[3]. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B.

BB&J also conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the central portion of the Subject Property and provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property. The basic approach of the flux chamber method was to use an enclosure or chamber to isolate a surface from the ambient air and potential collect compounds emanating from the subsurface. Potential compounds would either build-up over time in the static chamber headspace or, in the dynamic chamber method, clean sweep air is added to the chamber at a controlled rate. The effluent air from the chamber was collected at the ground surface and submitted to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B.

1.1.4 BB&J Phase II ESA: Community Center

The sampling procedures utilized during the BB&J Phase II ESA: Community Center is summarized below. Detailed sampling procedures are documented in the BB&J Phase II ESA: Community Center, which are included as Appendix J.

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. The soil gas samples were collected at a depth of five feet bgs using direct-push technology (i.e., Geoprobe®). The soil gas samples were submitted for laboratory analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B.

BB&J also conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the footprint of the proposed community center and provide data for a preliminary risk evaluation based on the proposed community center use of the Subject Property. The basic approach of the flux chamber method was to use an enclosure or chamber to isolate a surface from the ambient air and potential collect compounds emanating from the subsurface. Potential compounds would either build-up over time in the static chamber headspace or, in the dynamic chamber method, clean sweep air is added to the chamber at a controlled rate. The effluent air from the chamber was collected at the ground surface and submitted to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B.

2.0 DOCUMENTATION OF FIELD ACTIVITIES

BB&J performed several soil gas and flux chamber surveys in conjunction with geotechnical investigations at various locations at the Subject Property. The following is a summary of those investigations:

[3] The MSC asphalt parking lot and office building were not a part of the Subject Property during this investigation. As such, the BB&J Phase II ESA refers to these locations as near the south property line; however, with the addition of the MSC asphalt parking lot and office building to the Subject Property, these locations are no longer located on the south property line.

2.1 BB&J Preliminary Soil Gas Investigation

BB&J oversaw the advancement of 15 soil gas probe locations (identified as SG-1 through SG-15) by Terra Trace Environmental Services (Terra Trace) to assess whether VOCs had volatilized into the soil. Eleven soil boring locations were positioned in the locations of the proposed town homes (a total of 11 town homes were proposed) throughout the central portion of the Subject Property. In addition, the remaining four soil gas samples were collected from the location of the proposed community center located in the south central portion of the Subject Property[4].

The soil gas samples were obtained from a 2-inch diameter probe hole created by a track-mounted Geoprobe® drill rig. The Geoprobe® sampler with a solid point was advanced to a depth of approximately five feet bgs then was retracted approximately six inches. Dedicated ¼-inch diameter poly tubing was then inserted through the rods through a discrete sampling point to the six-inch space created by the retracting of the sampler. The dedicated tubing then extended from the six-inch space up through the rods and approximately four feet beyond. This tubing was then connected to a 60 milliliter (mL) plastic syringe with a three-way valve. Three times the dead volume, approximately four milliliters per foot or a total of 40 mLs, was then purged using the syringe. After purging, the syringe was then disconnected. The canister was then connected to the tubing using a ¼-inch Swagelok fitting. Leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the base of the rods where they entered the ground and around the sampling assembly (i.e., the poly tubing and Swagelok connection). The valve was then opened on the canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury the canister was disconnected, the canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped.

The sample name and collection time was then logged into the chain-of-custody to be sent along with the filled canisters back to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015B. The dedicated tubing was then removed and discarded and the rods and discrete sampling point were removed from the probe hole and decontaminated with a solution of Alconox®, non-phosphatic soap, and warm water. The drill rig was then moved to the next sample point and the aforementioned procedure was repeated.

2.2 BB&J Phase II ESA: Commercial Development

The BB&J Phase II ESA: Commercial Development was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation; however, this investigation was located primarily in the north portion of the Subject Property in the area of a proposed commercial development. More specifically, this investigation was conducted in the area of the north edge of the Former Quarry / Former CCDD fill operation.

[4] The location and position of the proposed community center has since changed the time of the BB&J Preliminary Soil Gas Investigation. The current proposed location of the community center is further to the south in the location of the MSC asphalt parking lot. No permanent structures are currently planned for this area of the Subject Property.

On May 11, 2007, BB&J oversaw the installation of three soil gas probes (CDSG-1, CDSG-2, and CDSG-3[5]) by Terra Trace. Using direct-push technology (i.e., Geoprobe®), Terra Trace created three holes in the subsurface located in each of the approximate centers of the three proposed commercial buildings on the north portion of the Subject Property.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Active Soil Gas Investigation Advisory* Section 2.2.5 A 1 and 2, created by the California Environmental Protection Agency (Cal EPA), dated January 28, 2003[6]. By use of direct-push technology (i.e., Geoprobe®), a soil probe was advanced to a depth of five feet bgs to create a hole for the soil vapor probe. Soil probes CDSG-1, CDSG-2, and CDSG-3 were installed to the bottom of the hole at an approximate depth of five feet bgs. Approximately one foot of sand was poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

The soil gas samples were collected using 400-mL Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60-mL plastic syringe with a three-way valve. Approximately 4 mLs per foot, or a total of 40 mLs (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch Swagelok fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and Swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

2.3 BB&J Phase II ESA: Future Use

The BB&J Phase II ESA: Future Use Evaluation was prepared to further address the COCs identified by BB&J within the BB&J Preliminary Soil Gas Investigation. The scope of work included the collection of three soil gas samples from the former southeastern portion of the Subject Property[7]. BB&J also conducted a Flux Chamber Survey to assess ground surface

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[5] The soil gas samples during this investigation were identified as CDSG to designate "commercial development soil gas" and to help differentiate between the soil gas samples collected during the BB&J's Preliminary Soil Gas Investigation in the recreational use area located in the central portion of the Subject Property.

[6] This document was prepared by the California EPA Department of Toxic Substance Control (DTSC) and the Los Angeles Regional Water Quality Control Board (LARWQCB) to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the California EPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

[7] As discussed previously in Section 2.1.5 and 2.1.6, the MSC asphalt parking lot and office building were not a part of the Subject Property during this investigation. As such, the BB&J Phase II ESA refers to these locations as near the south property line; however, with the addition of the MSC asphalt parking lot and office building to the Subject Property, these locations are no longer located on the south property line.

emission rates (or "flux") of VOCs from the subsurface (soil) beneath the central portion of the Subject Property and provide data for a preliminary risk evaluation based on the proposed outdoor recreational use of the Subject Property in the central portion of the Subject Property.

2.3.1 Soil Gas Survey

On May 11, 2007, BB&J installed three soil gas probes, SG-16, SG-17, and SG-18[8], in probes used to collect soil during the soil investigation (GP-1, GP-2, and GP-3, respectively). The three soil gas probes were located on the former southern property boundary of the Subject Property, which is currently located within the area of the proposed community center.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Advisory – Active Soil Vapor Investigation* Section 2.2.5 A 1 and 2, created by the California EPA DTSC and the LARWQCB, dated January 28, 2003[9].

Each soil probe used in the soil investigation (GP-1, GP-2, and GP-3) was backfilled with bentonite from the termination depth of 12 feet bgs to approximately six feet bgs. A soil gas probe tip and associated tubing was then inserted into the probe hole. Approximately one foot of sand was poured into the soil probe hole on top of the probe tip to a depth of five feet bgs to minimize the disruption of airflow to the probe tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

The soil gas samples were collected using 400-mL Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60-mL plastic syringe with a three-way valve. Approximately 4 mLs per foot, or a total of 40-mL (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch Swagelok fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and Swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

2.3.2 Flux Chamber Survey

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[8] The soil gas probes were identified as SG-16, SG-17, and SG-18 to continue the numbering of soil gas samples collected during previous soil gas investigations at the Subject Property. 15 soil gas samples had previously been collected.

[9] This document was prepared by the California EPA DTSC and LARWQCB to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the California EPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

Beginning on May 21, 2007, BB&J conducted a Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property and provide data for a preliminary risk evaluation based on the proposed outdoor recreational use area of the Subject Property. A total of 13 soil flux chambers were utilized to collect soil gas throughout the surface of the Subject Property and in the recreational area on the east adjoining property. BB&J placed six flux chambers (SF-5, SF-6, SF-10, SF-11, SF-12, and SF-13[10]) on the ground surface during the afternoon of May 21, 2007 and packed soil around the flux chamber edges to create an air-tight environment inside the flux chambers. BB&J returned the morning of May 22, 2007 to collect the accumulated gas samples. On May 24, 2007 BB&J placed seven additional soil flux chambers (SF-1, SF-2, SF-3, SF-4, SF-5, SF-7, and SF-8) on the ground surface using the same method to ensure an air-tight environment. BB&J returned on May 25, 2007 to collect the additional soil flux samples. In addition, soil flux chamber SF-9 was placed on the ground on the afternoon of May 25, 2007 and was collected in the morning of May 26, 2007 using the same sampling methodologies described above.

As part of the sampling procedures for the flux chambers, an "initial" soil flux sample of the ambient air within the flux chamber was collected for each soil flux location by connecting the 400-mL Summa canister to the soil flux chamber once the flux chamber was placed on the ground and an air-tight environment had been created. The purpose of the "initial" soil flux samples was to evaluate whether any VOCs present at the surface of the ground were collected inside the flux chamber at the time the flux chamber was placed on the ground surface. Any subsequent soil flux samples that contained high concentrations of VOCs would then be compared to the "initial" soil flux sample to determine whether the high concentrations of VOCs were from soil gas collected at the time the flux chamber was placed on the ground surface[11].

The flux chambers were then left overnight to collect gas from the subsurface and equilibrate[12]. The Subject Property is bordered by a fence and it is locked each evening to secure the Subject Property. The following morning, BB&J returned to the Subject Property to collect the incubated flux chamber samples using 400-mL Summa canisters. The soil flux samples were identified by the sample location and the time they were collected. BB&J personnel shipped the Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

2.4 BB&J Phase II ESA: Community Center

The BB&J Phase II ESA: Community Center was prepared to evaluate management and construction considerations related to the redevelopment of the southeast portion of the Subject Property as a proposed community center. This portion of the Subject Property was not located within the Former Quarry / Former CCDD Fill Operation. Three of the geotechnical soil borings were used to collect three soil gas samples at approximately five feet bgs. One soil flux sample was collected from the ground surface in this area.

2.4.1 Soil Gas Survey

[10] Flux chamber SF-13 was located at Smith Park, near the intersection of 42nd Street and Lawndale Avenue, to serve as a background sample.
[11] Soil flux samples SF-3 t=0 and SF-9 t=0 were analyzed as the concentrations in the soil flux sample contained concentrations of VOCs.
[12] The soil flux chambers were situated on the ground and exposed to soil vapors for at least 8 hours.

On June 1, 2007 and June 4, 2007, BB&J oversaw the installation of three soil gas probes (CCSG-32, CCSG-33, and CCSG-35) in their respective soil boring locations.

The installation, equilibration time, and sampling procedures utilized by BB&J for the Soil Gas Survey were pursuant to the guidelines identified in the *Active Soil Gas Investigation Advisory* Section 2.2.5 A 1 and 2, created by the Cal EPA, dated January 28, 2003[13]. After sampling, the soil boring was backfilled to approximately five feet bgs to leave a hole for the soil vapor probe. Soil probes CCSG-32, CCSG-33, and CCSG-35 were installed to the bottom of the hole at an approximate depth of five feet bgs. Approximately one foot of sand was poured on top of the probe tip to a depth of five feet bgs to minimize disruption of airflow to the sampling tip. At least one foot of dry granular bentonite was poured on top of each sand pack to preclude the infiltration of hydrated bentonite grout. The probe was then filled to the surface with hydrated bentonite with the end of the soil gas probe tubing protruding from the subsurface. BB&J allowed for at least 30 minutes for the subsurface conditions to equilibrate before conducting purging and sampling activities.

The soil gas samples were collected using 400-mL Summa canisters, which were filled via 1/4-inch diameter poly tubing attached to the soil gas probe. This tubing was connected to a 60 mL plastic syringe with a three-way valve. Approximately 4 mL per foot, or a total of 40 mL (three times the dead volume), were then purged from the soil gas probe using the syringe. After purging, the syringe was then disconnected. The 400-mL canister was then connected to the tubing using a 1/4-inch Swagelok fitting. A leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the sampling assembly (i.e., the poly tubing and Swagelok connection). The valve was then opened on the 400-mL canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury, the canister was disconnected. The 400-mL canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped. BB&J personnel shipped the 400-mL Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

2.4.2 Limited Flux Chamber Survey

On June 6, 2007, BB&J conducted a Limited Flux Chamber Survey to assess ground surface emission rates (or "flux") of VOCs from the subsurface (soil) beneath the Subject Property and provide data a preliminary risk evaluation based on the proposed community center use of the Subject Property. One soil flux chamber was utilized to collect soil gas in the footprint of the proposed community center. BB&J placed one flux chamber (CCSF-35) on the ground surface during the afternoon of June 6, 2007 and packed soil around the flux chamber edges to create an air-tight environment inside the flux chamber. BB&J returned the morning of June 7, 2007 to collect the accumulated gas sample.

As part of the sampling procedures for the flux chambers, an "initial" soil flux sample of the ambient air within the flux chamber was collected by connecting the 400-mL Summa canister to the soil flux chamber once the flux chamber was placed on the ground and an air-tight

[13] This document was prepared by the Cal EPA Department of Toxic Substance Control (DTSC) and Los Angeles Regional Water Quality Control Board (LARWQCB) to "ensure that consistent methodologies were applied during active soil gas investigations to produce high quality data for regulatory decision-making." As there are no existing regulations for soil gas investigations in Illinois, this document was used as the Cal EPA DTSC and LARWQCB are two regulatory agencies at the forefront of soil gas investigations in the United States.

environment had been created. The purpose of the "initial" soil flux sample was to evaluate whether any VOCs present at the surface of the ground were collected inside the flux chamber at the time the flux chamber was placed on the ground surface. Any subsequent soil flux samples that contained high concentrations of VOCs would then be compared to the "initial" soil flux sample to determine whether the high concentrations of VOCs were from soil gas collected at the time the flux chamber was placed on the ground surface.

The flux chamber was then left overnight to collect gas from the subsurface and equilibrate[14]. The following morning, BB&J returned to the Subject Property to collect the incubated flux chamber samples using 400-mL Summa canisters. The soil flux samples were identified by the sample location and the time they were collected. BB&J personnel shipped the Summa canister samples to H&P Laboratory for analysis of VOCs by USEPA Method TO-15 and methane by USEPA Method 8015.

3.0 DISCUSSION OF ANALYTICAL RESULTS

3.1 BB&J Preliminary Soil Gas Survey

BB&J utilized USEPA's on-line J&E calculator[15] to evaluate the vapor intrusion pathway into the proposed town homes and community center buildings. This J&E calculator replicates the implementation that the USEPA Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (OSWER Vapor Intrusion Guidance) used in developing its Vapor Intrusion Guidance but includes a number of enhancements that are facilitated by web implementation. The J&E calculator has become increasingly popular with regulators and consultants over the last 10 years and several manuscripts have been published on its use. It should be noted that the State of Illinois does not provide any guidance or soil gas standards with regard to vapor intrusion. However, BB&J understands that the IEPA is currently crafting draft guidance for vapor intrusion.

Briefly, the calculator is a one-dimensional analytical solution, which incorporates both advection and diffusion transport mechanisms to produce a unitless "attenuation factor." This attenuation factor is a measure of how soil and building properties limit the intrusion of organic vapors into overlying buildings and is defined as the concentration of the compound in indoor air divided by the concentration of the compound in soil gas or ground water.

Although the J&E calculator is inherently conservative, BB&J also made the following conservative assumptions in running the calculator:

- The highest soil gas concentration of a given constituent identified site-wide was assumed to be the concentration present site-wide (even if lower concentrations were identified elsewhere) for the proposed community center vapor intrusion scenario;

- OSWER Vapor Intrusion Guidance[16] allows a site risk manager to select media-specific target concentrations for screening at three cancer risk levels: 10^{-4}, 10^{-5}, and 10^{-6}; however, BB&J compared the modeled results to the most conservative of these (10^{-6});

[14] The soil flux chambers were situated on the ground and exposed to soil vapors for at least eight hours.
[15] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm
[16] http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf

- A less protective, best estimate and more protective target concentration were computed for the maximum soil gas concentration of a given constituent detected at the Subject Property. These computed "backward" target concentrations served as comparison to the detected soil gas concentrations at the Subject Property. The best estimate concentrations are based on the best guesses of depth to the contamination source and residual moisture content for the chosen soil type. The less protective and more protective range of values is computed based on user-specified uncertainty in both depth to the COC source and unsaturated zone moisture content;

- The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response Risk Assessment Guidance for Superfund (RAGS) Volume I, dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway; and,

- For use in comparing the concentrations of soil gas detected at the proposed community center to Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs), a low prediction estimate, best estimate, and high prediction estimate were all evaluated for each constituent. The "forward" predictions were then compared to the OSHA PELs for each constituent. The best estimate results are based on the estimated assumptions regarding depth to the sample location and residual moisture content for the chosen soil type. The low prediction and high prediction range of values is computed based on user-specified uncertainty in both depth to the sample and unsaturated zone moisture content.

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample.

VOCs including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents were detected in the soil gas samples collected in the central portion of the Subject Property. Of these, the following COCs were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentration for Estimated Risk-based Soil Gas Standards[17] under a proposed town home scenario:

- Benzene;

- TCE; and,

- Vinyl Chloride.

In addition to the VOCs detected at the proposed townhomes, two of the 11 soil gas samples contained concentrations within the lower explosive limit (LEL) and upper explosive limit

[17] These J&E calculations used residential default exposure factors due to the intended residential use of the proposed townhomes.

(UEL), and are considered to be within the explosive range for methane[18]. As previously indicated, however, a residential scenario is no longer being considered for the Subject Property. As of the date of this SIR, no residential redevelopment is proposed for any portions of the Subject Property. It should also be noted that the most conservative residential default exposure factors were used in the USEPA J&E model in these locations due to the former proposed residential use of this area of the Subject Property.

For samples collected in the vicinity of where the proposed community center was originally intended to be located, VOCs including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected in the central portion of the Subject Property. Furthermore, the following COCs were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards under a commercial scenario:

- Benzene;
- Carbon tetrachloride;
- 1,2-Dichloroethane;
- cis-1,2-Dichloroethane;
- Ethylbenzene;
- TCE; and,
- Vinyl chloride.

Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act [(CERCLA) i.e., Superfund] risk assessment, modeled cancer risks in this scenario were on the order of approximately 1,000 times greater than the 10^{-6} bench mark used for risk assessment purposes. This risk is driven primarily by the high concentrations of vinyl chloride and TCE. In addition to the VOCs detected at the proposed community center, two of the four soil gas samples in this location contained concentrations within the explosive range for methane.

For purposes of comparison, Table 3 of the BB&J Preliminary Soil Gas Survey depicts whether the known concentrations of soil gas detected at the proposed community center would have the potential to exceed OSHA PELs for air contaminants, as identified in 29 CFR Part 1910 Occupational Safety and Health Standards "Limits for Air Contaminants" Tables Z-1 and Z-2. The OSHA PELs are based on 8-hour time weighted averages (TWAs). None of the COCs detected in the soil gas samples from the proposed community center exceeded the OSHA PELs; however, it should be noted that the OSHA PELs are more typically applied in industrial settings rather than a non-industrial workplace setting, such as the proposed community center. In addition, town hall meetings involving residents could be considered by IEPA or USEPA to constitute a non-workplace usage of the community center. Consequently, the OSHA PELs may constitute a less conservative standard, but possibly less applicable standard relative to those presented in Table 2 of the BB&J Preliminary Soil Gas Survey.

[18] According to the National Fire Protection Association (NFPA), the LEL for methane is 5.0%, while the UEL is 15%.

BB&J indicated that possible remedies to limit the exposure of these VOCs to the inhabitants of the proposed town homes and community center include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. Additionally, to ensure that methane would not accumulate beneath or within the proposed structures at the Subject Property, proper venting of those structures would be required to reduce the potential for explosions to occur.

However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

It should be noted, however, that the proposed residential town homes and the proposed community center structure are no longer planned to be located at the locations atop where the soil gas samples were collected. As of the date of the SIR, no residential redevelopment is proposed for any portions of the Subject Property. Furthermore, the proposed community center has been moved to the location of the current MSC asphalt parking lot and building which was the south adjoining property at the date of the BB&J Preliminary Soil Gas Survey. The MSC asphalt parking lot and office building were not located on the Former Quarry / Former CCDD Fill Operation. Additionally, as discussed in greater detail below, soil flux samples were collected primarily in the western and central areas of the Subject Property surrounding the locations of the soil gas samples noted above as discussed in the BB&J Phase II ESA: Future Use Evaluation, to evaluate the potential human health effects of leaving these areas open. As discussed further in Section 3.2.2, the concentrations of COCs present in these soil gas samples were shown to dissipate to acceptable concentrations in open-air conditions or be absent by the time the gases migrated to the surface level.

3.2 BB&J Phase II ESA: Commercial Development

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample in the same manner that was conducted during the BB&J Preliminary Soil Gas Survey.

The modeled results of the soil gas investigation indicated that PCE and TCE had the potential to accumulate within one of the proposed commercial developments at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA (i.e., Superfund) risk assessment, modeled cancer risk exceeded the benchmark 10^{-6} (i.e., one in a million) cancer risk in the commercial scenario. This elevated risk is driven primarily by the presence of PCE and TCE. Results of the limited soil gas survey also indicated that concentrations of methane were not detected within the explosive range in all three locations.

It was noted that "(1) the Johnson-Ettinger model (the used to model the predict the target concentrations to compare to the soil gas concentrations detected bgs) is inherently conservative and (2) new soil [was] continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings." Furthermore, BB&J suggested that to limit the exposure to these constituents, a subsurface vapor barrier with engineered venting systems would have to be installed below the proposed structures. Additionally, BB&J suggested that to limit the exposure to these constituents, possible remedies include a subsurface vapor barrier with engineered venting systems installed below the proposed structures. However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

It should be noted, however, that <u>the proposed commercial buildings are no longer planned to be located at the locations atop where the soil gas samples were collected.</u> As of the date of this report, the proposed commercial buildings are to be moved north toward Ogden Avenue and away from the Former Quarry / Former CCDD Fill Operation.

3.3 BB&J Phase II ESA: Future Use

3.3.1 Limited Soil Gas Survey

BB&J conducted a limited soil gas survey from the three locations where the soil samples were collected along the former southeast portion of the Subject Property. Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample in the same manner that was conducted during the BB&J Preliminary Soil Gas Survey.

The modeled results of the soil gas investigation indicated that vinyl chloride had the potential to accumulate within a proposed building in this area at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA, i.e., Superfund risk assessment, modeled cancer risks under the most protective scenario slightly exceeded the 10^{-6} bench mark used for risk assessment purposes. Results of the limited soil gas survey also indicated that concentrations of methane were not detected within the explosive range in all three locations.

It was noted, however, that "(1) the Johnson-Ettinger model… is inherently conservative and (2) new soil is continually being placed at the Subject Property and, assuming the soil is devoid of VOC impacts, could serve as a barrier to VOC entry into the buildings." Additionally, BB&J suggested that to limit the exposure to these constituents, possible remedies include a subsurface vapor barrier with engineered venting systems installed below the proposed structures. However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

3.3.2 Flux Chamber Survey

Following the limited soil gas survey, a soil flux survey was conducted within the central portion of the Subject Property to determine whether the COCs identified in BB&J's previous soil gas surveys were present at the surface near the surface of the Subject Property. Using the laboratory analytical data collected from the soil flux samples, BB&J calculated the predicted concentration in the air at approximately five feet above the ground surface for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA risk assessment, <u>modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench-mark used for risk assessment purposes</u>.

In comparison with soil gas concentrations detected as part of the limited soil gas survey and previous limited soil gas surveys completed at the Subject Property, the laboratory data collected and modeled scenarios suggest that the detected constituents present at six feet bgs are significantly dissipated or are absent at the surface of the Subject Property. Possible remedies to limit the exposure of this VOC to the proposed building on the south portion of the Subject

Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems.

However, it should be noted that since the time of this report, the proposed future development of the Subject Property will include the installation of an approximately 3-foot thick clean soil cap or an approximately 1-foot clean clay cap in the recreation area. Further, a vapor barrier and passive vent system is currently proposed for the proposed community center.

3.4 BB&J Phase II ESA: Future Use

3.4.1 Limited Soil Gas Survey

BB&J conducted a limited soil gas survey from the three locations from the southeast portion of the Subject Property: two of which were located on the exterior of the proposed footprint of the community center, one located within the proposed footprint. Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in two soil gas samples in the same manner that was conducted during the BB&J Preliminary Soil Gas Survey.

The modeled results of the soil gas investigation indicated that the sample location within the proposed footprint contained concentrations of TCE, while the sample location located outside the proposed footprint contained concentrations of vinyl chloride that had the potential to accumulate within a proposed building in this area at concentrations that could pose a human health risk. Using risk assessment parameters typical of an IEPA or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, i.e., Superfund) risk assessment, modeled cancer risks in this scenario were on the order of approximately one in 1,000,000 chance per employee developing cancer directly attributable to vapor intrusion into the community center due to on-site sources. Results of the limited soil gas survey also indicated that a concentration of methane was detected within the explosive range for one location within the footprint of the proposed community center.

However, BB&J stated that the modeling should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model included, but were not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

3.4.2 Flux Chamber Survey

One soil flux sample was also collected from the southeast portion of the Subject Property to determine whether the COCs identified BB&J's previous soil gas survey were present at the surface of the Subject Property. The results indicated that the constituents detected within previous soil gas surveys were significantly dissipated at the surface of the soil.

Using the laboratory analytical data collected from the soil flux samples, BB&J calculated the predicted concentration in the air at approximately five feet above the ground surface for each of the constituents detected in the soil flux samples to determine a preliminary risk assessment for the future recreational use of the Subject Property. Using risk assessment parameters typical of an IEPA or USEPA-type CERCLA risk assessment, modeled cancer risks in this calculation of each detected VOC were less than the 10^{-6} (one in a million) bench-mark used for risk assessment purposes.

In comparison with soil gas concentrations detected as part of the limited soil gas survey and previous limited soil gas surveys completed at the Subject Property, the laboratory data collected and modeled scenarios suggest that the detected constituents present at six feet bgs are significantly dissipated or are absent at the surface of the Subject Property. Possible remedies to limit the exposure of this VOC to the proposed building on the south portion of the Subject Property include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. However, it should be noted that since the time of this report, the proposed future development of the Subject Property will include the installation of an approximately 3-foot thick clean soil cap or an approximately 1-foot clean clay cap in the recreation area. Further, a vapor barrier and passive vent system is currently proposed for the proposed community center.

ATTACHMENT

BB&J 2007 Preliminary Soil Gas Investigation

February 23, 2007

Village of Lyons c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Subject: **Report of Limited and Preliminary Soil Gas Investigation**
Southwest Corner of Ogden and Lawndale Avenues
Lyons, Illinois
BB&J Project No. 0236901

Dear Mr. Bush:

Bradburne, Briller & Johnson, LLC (BB&J) is pleased to provide the Village of Lyons with this *Report of Limited and Preliminary Soil Gas Investigation* (Preliminary Soil Gas Investigation) for the parcel of land located at the southwest corner of Ogden and Lawndale Avenues in Lyons, Cook County, Illinois (Subject Property). This project was performed in accordance with the Scope of Work outlined in BB&J's Proposal No. PN6-0296, dated January 23, 2007.

We appreciate the opportunity to provide you with our environmental consulting services. If you have any questions or require additional information, please call.

Sincerely,

BRADBURNE, BRILLER & JOHNSON, LLC

Kevin McCartney
Project Manager

Andy Bajorat, CHMM
Senior Scientist

J. Tim Bradburne, P. G.
Principal

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LIMITED AND PRELIMINARY SOIL GAS INVESTIGATION REPORT

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
140 South Dearborn Street
Chicago Illinois 60603

Submitted to:

Village of Lyons
c/o Robert K. Bush, Esq.
Ancel Glink Diamond Bush Dicianni & Krafthefer, P.C.
Chicago, Illinois

Prepared by:

BRADBURNE, BRILLER & JOHNSON, LLC
Chicago, Illinois

February 23, 2007

TABLE OF CONTENTS

1.0 BACKGROUND 1

2.0 OBJECTIVE 1

3.0 SUBSURFACE INVESTIGATION 2
- 3.1 Pre-Mobilization Activities 2
- 3.2 Soil Gas Survey 2

4.0 FINDINGS AND ANALYTICAL RESULTS 3
- 4.1 Laboratory Analytical Results 3
- 4.2 Soil Gas Results 4

5.0 VAPOR INTRUSION MODELING 4
- 5.1 Johnson and Ettinger Calculations 4
- 5.2 Results 6
  - 5.2.1 Proposed Residential Area 6
  - 5.2.2 Proposed Community Center Area 7

6.0 CONCLUSIONS 8
- 6.1 Soil Gas Survey and Vapor Intrusion Modeling 8
- 6.2 Conclusions and Recommendations 9

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results from Proposed Townhomes
Table 2: Summary of Soil Gas Laboratory Analytical Results from Proposed Community Center
Table 3: Summary of Soil Gas Laboratory Analytical Results from Proposed Community Center & OSHA PELs

FIGURES

Figure 1: Site Location Map
Figure 2: Site Plan Showing Soil Gas Survey Locations
Figure 3: Soil Gas Survey on Proposed Layout of Subject Property

APPENDICES

Appendix A: Field Procedures
Appendix B: Laboratory Analytical Reports

1.0 BACKGROUND

BB&J conducted a Preliminary Soil Gas Investigation for the parcel of land located on the southwest corner of Ogden and Lawndale Avenues in Lyons, Illinois (Subject Property). The Subject Property, which was formerly used as a quarry, appears to have been backfilled from 20 feet below ground surface to the surface with black cinders or coarse-graded asphalt (based on a review of soil boring logs prepared by H.H. Holmes) and fill material. It is unknown what type of fill material was present at greater depths. The origin of the deeper fill material is unknown, some of which may require excavation or be disturbed during site redevelopment.

BB&J understands that the entirety of the Subject Property will be redeveloped such that an engineered barrier would be constructed site-wide. Because the Subject Property is being considered for residential and commercial mixed-use development, it was requested of BB&J to conduct an investigation to evaluate the potential the subsurface to be impacted with constituents of concern (COCs). When the Subject Property was transferred by Materials Service Corporation to the Village of Lyons a provision in the real estate purchase agreement prevented the new owner from collecting samples for environmental profiling at depths greater than five feet below ground surface (bgs). Due to (1) the historic use of the Subject Property as construction and demolition debris fill operation, (2) the area targeted for site redevelopment was situated on top of the historic fill area, and (3) given that there were restrictions placed on the depth at which soil and/or groundwater samples could be collected, it was determined that a limited shallow preliminary soil gas investigation could possibly reveal the presence and type of COCs that could be present onsite.

Based on the information known about the Subject Property and the surrounding properties, the unknown source of the fill material has been identified as a potential recognized environmental condition (REC).

2.0 OBJECTIVE

The objective of this project was to assess the potential for COCs to be present at the Subject Property in association with the fill material, as discussed in Section 1.0.

3.0 SUBSURFACE INVESTIGATION

The following sections present a summary of the subsurface assessment activities conducted for the Subject Property.

3.1 Pre-Mobilization Activities

Prior to initiating field activities, BB&J prepared a Health and Safety Plan (HSP) for use by BB&J's on-site representative to address known and suspected site-specific COCs, potential site and work-related hazards, and additional health and safety issues. In addition, BB&J contacted the approved Illinois utility-locating companies to clear the underground utilities on January 26, 2007 (over 72 hours prior to field work).

3.2 Soil Gas Survey

On February 1 and 2, 2007, BB&J conducted a soil gas survey throughout the Subject Property. Soil gas samples were collected using 400-milliliter summa canisters. Soil gas samples were collected at 15 soil boring locations (SB-1 through SB-15) at a depth of approximately five feet below ground surface (bgs). The samples were obtained from a 2-inch diameter probe hole created by a track-mounted Geoprobe® drill rig. The Geoprobe® sampler with a solid point was advanced to a depth of approximately five feet bgs then was retracted approximately six inches. Dedicated ¼-inch diameter poly tubing was then inserted through the rods through a discrete sampling point to the six-inch space created by the retracting of the sampler. The dedicated tubing then extended from the six-inch space up through the rods and approximately four feet beyond. This tubing was then connected to a 60 milliliter plastic syringe with a three-way valve. Three times the dead volume, approximately four milliliters per foot or a total of 40 milliliters, was then purged using the syringe. After purging, the syringe was then disconnected. The canister was then connected to the tubing using a ¼-inch swagelok fitting. Leak tracer, consisting of isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the base of the rods where they entered the ground and around the sampling assembly (i.e., the poly tubing and swagelok connection). The valve was then opened on the canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury the canister was disconnected, the canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped.

The sample name and collection time was then logged into the chain-of-custody to be sent along with the filled canisters back to the laboratory for analysis of volatile organic compounds (VOCs) by United States

Environmental Protection Agency (USEPA) Method TO-15 and methane by USEPA Method 8015B. The dedicated tubing was then removed and discarded and the rods and discrete sampling point were removed from the probe hole and decontaminated with a solution of Alconox®, non-phosphatic soap, and warm water. The drill rig was then moved to the next sample point and the aforementioned procedure was repeated.

4.0 FINDINGS AND ANALYTICAL RESULTS

The following sections present the subsurface assessment findings and a summary of the laboratory analytical results.

4.1 Laboratory Analytical Results

It is BB&J's understanding that the Subject Property is being considered for residential and commercial development. Therefore, BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[1] to compare the results of the soil gas survey to potential vapor intrusion pathways into the proposed townhomes and community center buildings. In using the J&E calculator, BB&J utilized both residential and commercial exposure factors as the Subject Property is being developed for both residential and commercial use[2].

A summary of the soil gas analytical results for samples collected from proposed townhome locations are compared to J&E calculated Estimated Risk-based Soil Gas Standards for a residential scenario in Table 1. A summary of the soil gas analytical results for samples collected from community center locations are compared to J&E calculated Estimated Risk-based Soil Gas Standards for a commercial scenario in Table 2. Modeled indoor air concentrations at the proposed community center are compared to the Occupational Health and Safety Administration (OSHA) Permissible Exposure Limits (PELs) for Air Contaminants in Table 3[3,4].

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[1] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm

[2] The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response *Risk Assessment Guidance For Superfund Volume I: Human Health Evaluation Manual* (RAGS Volume I), dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway.

[3] As discussed in the USEPA's 2002 *Draft Guidance For Evaluating the Vapor Intrusion to Indoor Air Pathway From Groundwater and Soils* (Vapor Intrusion Guidance), Section I.D.1 of the Vapor Intrusion Guidance states that the Occupational Safety and Health Administration (OSHA) and USEPA "have agreed that OSHA generally will take the lead in addressing occupational exposures." As such, BB&J compared the modeled indoor air concentrations to OSHA's PELs, which are expressed as time-weighted averages (TWAs).

[4] OSHA is the Federal agency responsible for workplace safety and health. OSHA created indoor air standards that are designed to protect workers in industrial occupational environments. In the past, OSHA focused primarily on

4.2 Soil Gas Results

Numerous VOCs were detected in soil gas samples throughout the Subject Property by USEPA TO-15 analysis, including:

- Acetone
- Benzene
- 2-Butanone
- Carbon disulfide
- Carbon tetrachloride
- Chloromethane
- Cyclohexane
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- trans-1,2-Dichloroethene
- Ethylbenzene
- 4-Ethyltoluene
- n-Heptane
- n-Hexane
- 4-Methyl-2-pentanone
- Styrene
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene (TCE)
- Trichlorofluoromethane
- 1,1,2-Trichlorotrifluoroethane
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Vinyl chloride
- m,p-Xylene
- o-Xylene

In addition, methane was detected in each of the 15 soil gas samples using a modified version of USEPA Method 8015B. Specific locations and concentrations of each of these are presented in Tables 1, 2 and 3. Further discussion of these results is provided in Section 5.2.

5.0 VAPOR INTRUSION MODELING

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in buried wastes and/or impacted groundwater can emit vapors that may migrate through subsurface soil and into air spaces of overlying buildings.

5.1 Johnson and Ettinger Calculations

BB&J utilized USEPA's on-line Johnson and Ettinger (J&E) (Johnson and Ettinger, 1991) calculator[5] to evaluate the vapor intrusion pathway into the proposed townhomes and community center buildings. This J&E calculator replicates the implementation that the USEPA Office of Solid Waste and Emergency

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industrial worksites, but most recently has broadened its efforts to address other worksite hazards. In spring 1994, OSHA introduced a proposed rule regarding indoor air quality in non-industrial environments, although the proposal was withdrawn in December 2001 (USEPA – Air Indoor Quality: http://www.epa.gov/iaq/index.html).

[5] http://www.epa.gov/athens/learn2model/part-two/onsite/jne_results_forward.htm

Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (OSWER Vapor Intrusion Guidance) used in developing its Vapor Intrusion Guidance but includes a number of enhancements that are facilitated by web implementation. The J&E calculator has become increasingly popular with regulators and consultants over the last 10 years and several manuscripts have been published on its use. It should be noted that the State of Illinois does not provide any guidance or soil gas standards with regard to vapor intrusion.

Briefly, the calculator is a one-dimensional analytical solution, which incorporates both advection and diffusion transport mechanisms to produce a unitless "attenuation factor." This attenuation factor is a measure of how soil and building properties limit the intrusion of organic vapors into overlying buildings and is defined as the concentration of the compound in indoor air divided by the concentration of the compound in soil gas or ground water.

Although the J&E calculator is inherently conservative, BB&J also made the following conservative assumptions in running the calculator:

- The highest soil gas concentration of a given constituent identified site-wide was assumed to be the concentration present site-wide (even if lower concentrations were identified elsewhere) for the community center vapor intrusion scenario (i.e., as presented in Table 3);

- OSWER Vapor Intrusion Guidance[6] allows a site risk manager to select media-specific target concentrations for screening at three cancer risk levels: 10^{-4}, 10^{-5}, and 10^{-6}; however, BB&J compared the modeled results to the most conservative of these (10^{-6});

- A less protective, best estimate and more protective target concentration were computed for the maximum soil gas concentration of a given constituent detected at the Subject Property. These computed "backward" target concentrations served as comparison to the detected soil gas concentrations at the Subject Property. The best estimate concentrations are based on the best guesses of depth to the contamination source and residual moisture content for the chosen soil type. The less protective and more protective range of values is computed based on user-specified uncertainty in both depth to the contamination source and unsaturated zone moisture content;

- The default J&E calculator uses default exposure factors for residential land use. When using the J&E calculator to determine the concentrations of soil gas entering the proposed community center, commercial/industrial land use exposure factors were used in the J&E calculator. The specific commercial/industrial default exposure factors used can be found in the USEPA Office of Emergency and Remedial Response RAGS Volume I, dated March 25, 1991, Summary of Standard Default Exposure Factors, Commercial/Industrial Land Use, Inhalation of Contaminants Exposure Pathway; and,

[6] http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf

- For use in comparing the concentrations of soil gas detected at the proposed community center to OSHA PELs, a low prediction estimate, best estimate, and high prediction estimate were all evaluated for each constituent. The "forward" predictions were then compared to the OSHA PELs for each constituent. The best estimate results are based on the estimated assumptions regarding depth to the sample location and residual moisture content for the chosen soil type. The low prediction and high prediction range of values is computed based on user-specified uncertainty in both depth to the sample and unsaturated zone moisture content.

Based on the results of the soil gas survey at the Subject Property, BB&J ran the J&E calculator for the constituents reported to be present in at least one soil gas sample (see Section 4.2).

5.2 Results

The soil gas survey results for both the residential and community center scenarios are presented below:

5.2.1 Proposed Residential Area

As indicated in Table 1, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected site-wide. Of these, the following constituents of concern (COCs) were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentration for Estimated Risk-based Soil Gas Standards[7]:

- Benzene;
- TCE; and,
- Vinyl Chloride.

Collectively, modeled cancer risks in the residential scenario were on the order of approximately 50 times greater than the 10^{-6} bench mark used for risk assessment purposes. Plainly stated, the modeled results indicate an approximately one in 20,000 chance per resident of developing cancer directly attributable to vapor intrusion into the townhomes due to on-site sources in some locations. Specifically, vinyl chloride has been identified by the United States Department of Health and Human Services to be associated with brain, liver, lung, and certain blood cancers[8]. Similarly, TCE is "reasonably anticipated" to be associated

[7] These J&E calculations used residential default exposure factors due to the intended residential use of the proposed townhomes.
[8] http://www.atsdr.cdc.gov/tfacts20.html#bookmark06

with liver, kidney, or lung cancer[9], and benzene is a known carcinogen associated with leukemia, particularly acute myelogenous leukemia[10].

In addition to the VOCs detected at the proposed townhomes, as indicated in Table 1 methane was detected in each soil gas sample from these locations. Two of the 11 soil gas samples contained concentrations within the lower explosive limit (LEL) and upper explosive limit (UEL), and are considered to be within the explosive range for methane[11].

5.2.2 Proposed Community Center Area

As indicated in Table 2, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected sitewide.. Furthermore, the following COCs were estimated to result in indoor concentrations greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards[12]:

- Benzene;
- Carbon tetrachloride;
- 1,2-Dichloroethane;
- cis-1,2-Dichloroethane;
- Ethylbenzene;
- TCE; and,
- Vinyl chloride.

Using risk assessment parameters typical of an Illinois Environmental Protection Agency (IEPA) or USEPA-type Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, i.e., Superfund) risk assessment, modeled cancer risks in this scenario were on the order of approximately 1,000 times greater than the 10^{-6} bench mark used for risk assessment purposes. Plainly stated, the modeled results indicate an approximately one in 1,000 chance per employee developing cancer directly attributable to vapor intrusion into the community center due to on-site sources. This risk is driven

[9] http://www.atsdr.cdc.gov/tfacts19.html#bookmark06
[10] http://www.atsdr.cdc.gov/tfacts3.html#bookmark06
[11] According to the National Fire Protection Association (NFPA), the LEL for methane is 5.0%, while the UEL is 15%.
[12] These J&E calculations used commercial/industrial default exposure factors due to the intended commercial use of the proposed community center.

primarily by the high concentrations of vinyl chloride and TCE, which as described in Section 5.2.1., are known or suspected carcinogens.

In addition to the VOCs detected at the proposed community center, as indicated in Table 2 methane was detected in each soil gas sample from these locations. Two of the four soil gas samples contained concentrations within the explosive range for methane.

For purposes of comparison, Table 3 depicts whether the known concentrations of soil gas detected at the proposed community center would have the potential to exceed OSHA PELs for air contaminants, as identified in 29 Code of Federal Regulations (CFR) Part 1910 Occupational Safety and Health Standards "Limits for Air Contaminants" Tables Z-1 and Z-2. The OSHA PELs are based on 8-hour time weighted averages (TWAs). None of the COCs detected in the soil gas samples from the proposed community center exceeded the OSHA PELs; however, it should be noted that the OSHA PELs are more typically applied in industrial settings rather than a non-industrial workplace setting, such as the proposed community center. In addition, town hall meetings involving residents would likely be considered by IEPA or USEPA to constitute a non-workplace usage of the community center. Consequently, the OSHA PELs may constitute a less conservative standard, but possibly less applicable standard relative to those presented in Table 2.

6.0 CONCLUSIONS

Based on the information presented in Sections 1.0 through 5.0 of this Report, BB&J offers the following conclusions and recommendations for the Subject Property.

6.1 Soil Gas Survey and Vapor Intrusion Modeling

As indicated above, multiple VOCs, including constituents consistent with historic releases of gasoline, chlorinated solvents and oxygenated solvents, were detected in the soil gas samples collected sitewide. Based on modeled results using default exposure factors for residential and commercial scenarios, cancer risks exceeded the benchmark 10^{-6} (i.e., one in a million) cancer risk in both the residential and commercial scenarios. These elevated risks are driven primarily by the presence of vinyl chloride and TCE; however, a number of other known or suspected carcinogens were also identified.

With respect to the community center, modeled indoor air concentrations were compared to the OSHA PELs. None of the COCs detected in the soil gas samples from the proposed community center exceeded

the OSHA PELs (see Table 3). OSHA often asserts jurisdiction over state or federal environmental authorities in a workplace setting; however, it should be noted that the OSHA PELs are more typically applied in industrial settings rather than a non-industrial workplace setting, such as the proposed community center. In addition, town hall meetings involving residents would likely be considered by IEPA or USEPA to constitute a non-workplace usage of the community center. Consequently, the OSHA PELs may constitute a less conservative standard, but possibly less applicable standard relative to those presented in Table 2.

In addition to the chronic hazards potentially present at the Subject Property, concentrations of methane were reported to be present in four of the 15 samples collected site-wide at concentrations within the explosive range for methane.

A detailed discussion of all of these findings is presented in Section 5.2.

6.2 Conclusions and Recommendations

As indicated in Tables 1 and 2, concentrations of multiple VOCs were detected above the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards. In particular, TCE and vinyl chloride were detected in concentrations two to three orders of magnitude greater than the modeled "more-protective" Target Concentrations for Estimated Risk-based Soil Gas Standards. Such concentrations suggest that these constituents have the potential to accumulate within the proposed townhomes and community center at concentrations that would pose a human health risk. Possible remedies to limit the exposure of these constituents to inhabitants of the proposed townhomes and community center include installation of a subsurface vapor barrier beneath the proposed buildings at the Subject Property combined with engineered venting systems. Both the subsurface vapor barrier and the venting subsurface would require maintenance and upkeep for the lifetime of the buildings. In addition, the venting system would require air permits from IEPA to discharge the VOCs into the ambient air.

The presence of methane within its explosive range at various locations at the Subject Property also should be noted and explored further. To ensure that methane would not accumulate beneath or within the proposed structures at the Subject Property, proper venting of those structures would be required to reduce the potential for explosions to occur. The presence of methane detected site-wide may indicate that material inconsistent with IEPA's definition of clean construction and demolition debris may be present beneath the surface of the Subject Property. As the material decomposes, shifting of the

subsurface may occur, causing structural damage to overlying structures, including the proposed townhomes and community center.

The specific sources of the VOCs and methane could not be determined by the limited scope of this investigation. However, BB&J understands that a gasoline station was formerly located on the northeast portion of the Subject Property near the intersection of Ogden Avenue and Lawndale Avenue. A leaking underground storage tank (LUST) incident was reported for the gasoline station and a No Further Remediation (NFR) letter was issued for the LUST incident. Despite the issuance of the NFR, the gasoline station may still be the source of the gasoline-related compounds, partly or wholly.

Sources of the chlorinated solvents and non-chlorinated solvents have not been identified. While these constituents were identified in varying concentrations site-wide, the highest concentrations were identified in the samples collected in the southeastern portion of the Subject Property.

The modeling conducted by BB&J should be regarded as preliminary and should be used for guidance purposes only. Factors that may impact the accuracy of the model include, but are not limited to:

- The limited number of samples collected at the Subject Property relative to the overall size;
- Effects of proposed future grading activities;
- Estimated building air exchange rates used in the model relative to actual building air exchange rates;
- Characteristics of the soil proposed to be placed on top of the existing fill material during proposed grading activities; and,
- The degree to which the concrete slabs crack in the future due to possible subsidence resultant from the continued decay of materials in the subsurface or other unknown subsurface conditions.

TABLES

Table 1: Summary of Soil Gas Laboratory Analytical Results from Proposed Townhomes

												Maximum Concentration Detected at Townhomes	BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards[1]			Explosive Range	
Soil - Gas ID	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9	SB-10	SB-11		Less Protective Target Concentration	Best Estimate Target Concentration	More Protective Target Concentration	Lower Explosive Limit (LEL) [3]	Upper Explosive Limit (UEL)[3]
Soil Sample Depth[2]	6.0	6.0	5.0	6.0	6.0	5.5	6.0	6.0	5.5	5.5	6.0						
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	ug/m^3	(ug/m^3)	(ug/m^3)	(ug/m^3)	(%)	(%)
USEPA Method T0-15 (VOCs)																	
Acetone	ND	62	310	100	ND	41	ND	ND	ND	200	ND	310	562,000	199,900	111,700	NA	NA
Benzene	11	ND	34	27	92	32	84	24	37	**160** [4]	130	**160**	938.6	228	114.4	NA	NA
2-Butanone (MEK)	14	7.6	75	37	14	15	18	7.5	11	37	11	75	2,359,000	767,700	381,100	NA	NA
Carbon disulfide	33	ND	75	28	230	99	26	10	ND	210	74	230	1,809,000	454,900	239,000	NA	NA
Chloromethane (Methyl Chloride)	ND	ND	ND	ND	18	6.3	ND	ND	ND	38	ND	38	5,277	1,392	772.2	NA	NA
Cyclohexane	110	ND	38	44	590	91	47	ND	390	80	380	590	NMD	NMD	NMD	NA	NA
1,1-Dichloroethene (1,1-Dichloroethylene)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.0	8.0	591,000	143,900	72,590	NA	NA
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	11	ND	ND	ND	5.6	ND	ND	ND	ND	7.9	340	340	124,200	29,200	13,950	NA	NA
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	110	258,800	60,210	28,460	NA	NA
Ethylbenzene	7.1	ND	10	11	24	9.8	20	6.8	9.2	42	14	42	7,737	1,819	873.5	NA	NA
n-Heptane (Heptane)	160	6.7	33	28	2000 [5]	29	66	25	35	190	1,400	2,000	NMD	NMD	NMD	NA	NA
n-Hexane (Hexane)	240	7.3	56	57	2300 [5]	69	97	62	470	210	1,800	2,300	288,500	87,110	55,030	NA	NA
4-Methyl-2-pentanone (Methylisobutylketone)	ND	ND	ND	ND	ND	ND	ND	ND	35	ND	ND	35	242,800	65,450	31,590	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.2	8.2	3,661,000	857,200	405,700	NA	NA
Tetrachloroethene (Tetrachloroethylene)	11	ND	ND	ND	ND	ND	ND	ND	ND	6.2	ND	11	2,953	688.1	362.8	NA	NA
Toluene	20	6.8	40	36	67	35	84	20	23	120	54	120	1,217,000	294,800	147,400	NA	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	13	28	ND	ND	ND	28	7,428,000	1,757,000	852,500	NA	NA
Trichloroethene (Trichloroethylene)	**12**	ND	ND	ND	ND	ND	ND	ND	ND	**15**	**100**	**100**	73.7	17.5	8.5	NA	NA
Trichlorofluoromethane	ND	ND	ND	ND	24	ND	ND	ND	ND	ND	ND	24	2,136,000	516,000	257,900	NA	NA
1,1,2-Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-Trifluoroethane	21	11	ND	ND	10	12	39	16	15	ND	24	39	101,700,000	24,040,000	11,660,000	NA	NA
1,2,4-Trimethylbenzene	ND	ND	ND	ND	8.9	ND	5.2	ND	ND	6.8	ND	8.9	25,410	5,769	2,620	NA	NA
1,3,5-Trimethylbenzene	ND	ND	ND	ND	5.9	ND	ND	ND	ND	5.2	ND	5.9	25,550	5,799	2,630	NA	NA
2,2,4-Trimethylpentane	ND	ND	ND	42	ND	ND	ND	30	490	83	ND	490	NMD	NMD	NMD	NA	NA
Vinyl chloride	8.1	ND	12	ND	5.7	ND	ND	ND	**710**	22	**3,600**	**3,600**	702.3	177.4	93.7	NA	NA
m,p-Xylene	6.5	ND	7.6	7.8	18	8.3	15	7.3	11	31	7.7	31	NMD	NMD	NMD	NA	NA
o-Xylene	6.6	ND	6.8	8.0	20	7.8	14	6.2	12	30	8.2	30	Saturation	5,159,000	2,579,000	NA	NA
USEPA Method 8015B	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)					
Methane	1.0	0.038	0.58	**6.2**	0.068	1.9	1.8	0.42	**9.3**	1.3	0.53	**9.3**	NMD	NMD	NMD	5.0	15.0

Notes:
[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model (http://www.epa.gov/athens/learn2model/part-
[2] Depths indicated in feet below ground surface (bgs).
[3] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.
[4] Numbers illustrated in **bold** indicate concentrations equal to or above Target Soil Gas Concentrations or within the explosive range for methane.
[3] As indicated by H&P Mobile Geochemistry, the concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

Acronyms:
NA: Not applicable
ND: Not detected
NMD: No model data for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: KLM / 2.23.2007
Checked By: AWB / 2.23.2007

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:22:39 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08[g/mole] Henrys Constant: 0.0008474723[unitless]
Diffusivity in Air: 0.1240[cm^2/sec] Diffusivity in Water: 1.140e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007951[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.005227[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001751
Ground Water Attenuation Factor (α_{GW}): 0.001311
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 350[$\mu g/m^3$] or 147.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 5.612e5[$\mu g/m^3$] or 2.364e5[ppbv]; Ground Water: 6.709e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.999e5[$\mu g/m^3$] or 8.419e4[ppbv]; Ground Water: 3.150e5[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.117e5[$\mu g/m^3$] or 4.705e4[ppbv]; Ground Water: 2.303e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:23:18 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11[g/mole] Henrys Constant: 0.1152703[unitless]
Diffusivity in Air: 8.800e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000078[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00554[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000377[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001368
Ground Water Attenuation Factor (α_{GW}): 0.0001257
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.312[$\mu g/m^3$] or 0.09771[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 938.6[$\mu g/m^3$] or 294.0[ppbv]; Ground Water: 26.66[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 228.0[$\mu g/m^3$] or 71.43[ppbv]; Ground Water: 21.54[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 114.4[$\mu g/m^3$] or 35.82[ppbv]; Ground Water: 20.74[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:43:14 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11[g/mole] Henrys Constant: 0.001130542[unitless]
Diffusivity in Air: 8.080e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00518[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.003388[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001303
Ground Water Attenuation Factor (α_{GW}): 0.000938
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1000[$\mu g/m^3$] or 339.3[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.359e6[$\mu g/m^3$] or 8.004e5[ppbv]; Ground Water: 2.118e6[µg/L]

Best Estimate Target Concentrations
Soil Gas: 7.677e5[$\mu g/m^3$] or 2.605e5[ppbv]; Ground Water: 9.430e5[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.811e5[$\mu g/m^3$] or 1.293e5[ppbv]; Ground Water: 6.647e5[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:24:18 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13[g/mole] Henrys Constant: 0.7157535[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006547[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003847[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001539
Ground Water Attenuation Factor (α_{GW}): 0.0001282
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 700[$\mu g/m^3$] or 225[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.809e6[$\mu g/m^3$] or 5.815e5[ppbv]; Ground Water: 9203.[µg/L]

Best Estimate Target Concentrations
Soil Gas: 4.549e5[$\mu g/m^3$] or 1.462e5[ppbv]; Ground Water: 7630.[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.390e5[$\mu g/m^3$] or 7.682e4[ppbv]; Ground Water: 7385.[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:25:35 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49[g/mole] Henrys Constant: 0.2477062[unitless]
Diffusivity in Air: 0.1260[cm^2/sec] Diffusivity in Water: 6.500e-6[cm^2/sec]
Unit Risk Factor: 0.000001[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007931[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0004727[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001749
Ground Water Attenuation Factor (α_{GW}): 0.0001565
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 2.433[$\mu g/m^3$] or 1.179[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 5277.[$\mu g/m^3$] or 2557.[ppbv]; Ground Water: 75.78[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 1392.[$\mu g/m^3$] or 674.4[ppbv]; Ground Water: 62.75[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 772.2[$\mu g/m^3$] or 374.2[ppbv]; Ground Water: 60.72[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:27:27 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethylene CAS Number: 75354
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.632751[unitless]
Diffusivity in Air: 9.000e-2[cm^2/sec] Diffusivity in Water: 1.040e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005665[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000336[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.00139
Ground Water Attenuation Factor (α_{GW}): 0.0001123
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 200[$\mu g/m^3$] or 50.48[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 5.910e5[$\mu g/m^3$] or 1.491e5[ppbv]; Ground Water: 3401.[µg/L]

Best Estimate Target Concentrations
Soil Gas: 1.439e5[$\mu g/m^3$] or 3.631e4[ppbv]; Ground Water: 2814.[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 7.259e4[$\mu g/m^3$] or 1.832e4[ppbv]; Ground Water: 2723.[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:28:07 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: cis-1,2-Dichloroethylene CAS Number: 156592
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.08772779[unitless]
Diffusivity in Air: 7.360e-2[cm^2/sec] Diffusivity in Water: 1.130e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.035[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004634[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003552[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001199
Ground Water Attenuation Factor (α_{GW}): 0.0001186
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 35[$\mu g/m^3$] or 8.833[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.242e5[$\mu g/m^3$] or 3.133e4[ppbv]; Ground Water: 4264.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2.920e4[$\mu g/m^3$] or 7368.[ppbv]; Ground Water: 3365.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.395e4[$\mu g/m^3$] or 3520.[ppbv]; Ground Water: 3223.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:28:47 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: trans-1,2-Dichloroethylene CAS Number: 156605
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.2127646[unitless]
Diffusivity in Air: 7.070e-2[cm^2/sec] Diffusivity in Water: 1.190e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.07[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004451[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002942[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001163
Ground Water Attenuation Factor (α_{GW}): 0.00009862
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 70[$\mu g/m^3$] or 17.67[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.588e5[$\mu g/m^3$] or 6.532e4[ppbv]; Ground Water: 4112.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.021e4[$\mu g/m^3$] or 1.520e4[ppbv]; Ground Water: 3336.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 2.846e4[$\mu g/m^3$] or 7182.[ppbv]; Ground Water: 3215.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:29:13 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.1364569[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000011[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004722[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003106[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001216
Ground Water Attenuation Factor (α_{GW}): 0.000104
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 2.212[$\mu g/m^3$] or 0.5098[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 7737.[$\mu g/m^3$] or 1783.[ppbv]; Ground Water: 191.9[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 1819.[$\mu g/m^3$] or 419.3[ppbv]; Ground Water: 155.9[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 873.5[$\mu g/m^3$] or 201.3[ppbv]; Ground Water: 150.2[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:30:44 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18[g/mole] Henrys Constant: 35.82923[unitless]
Diffusivity in Air: 0.2000[cm^2/sec] Diffusivity in Water: 7.770e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.01259[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000721[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.002296
Ground Water Attenuation Factor (α_{GW}): 0.0002348
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 200[$\mu g/m^3$] or 56.78[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.885e5[$\mu g/m^3$] or 8.190e4[ppbv]; Ground Water: 28.44[μg/L]

Best Estimate Target Concentrations
Soil Gas: 8.711e4[$\mu g/m^3$] or 2.473e4[ppbv]; Ground Water: 23.77[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.503e4[$\mu g/m^3$] or 1.562e4[ppbv]; Ground Water: 23.04[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:31:16 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16[g/mole] Henrys Constant: 0.002453269[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004755[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.001889[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001222
Ground Water Attenuation Factor (α_{GW}): 0.0005711
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 80[$\mu g/m^3$] or 19.54[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.428e5[$\mu g/m^3$] or 5.930e4[ppbv]; Ground Water: 1.173e5[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 6.545e4[$\mu g/m^3$] or 1.599e4[ppbv]; Ground Water: 5.710e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 3.159e4[$\mu g/m^3$] or 7716.[ppbv]; Ground Water: 4.588e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:31:45 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Styrene CAS Number: 100425
Molecular Weight: 104.15[g/mole] Henrys Constant: 0.04638236[unitless]
Diffusivity in Air: 7.100e-2[cm^2/sec] Diffusivity in Water: 8.000e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004471[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003756[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001167
Ground Water Attenuation Factor (α_{GW}): 0.0001252
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1000[$\mu g/m^3$] or 234.9[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.661e6[$\mu g/m^3$] or 8.599e5[ppbv]; Ground Water: 2.224e5[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 8.572e5[$\mu g/m^3$] or 2.014e5[ppbv]; Ground Water: 1.722e5[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 4.057e5[$\mu g/m^3$] or 9.530e4[ppbv]; Ground Water: 1.643e5[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:32:14 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83[g/mole] Henrys Constant: 0.3362604[unitless]
Diffusivity in Air: 7.200e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0.000003[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004532[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002767[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001179
Ground Water Attenuation Factor (α_{GW}): 0.00009288
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.8111[$\mu g/m^3$] or 0.1197[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2953.[$\mu g/m^3$] or 435.7[ppbv]; Ground Water: 31.57[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 688.1[$\mu g/m^3$] or 101.5[ppbv]; Ground Water: 25.97[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 326.8[$\mu g/m^3$] or 48.21[ppbv]; Ground Water: 25.10[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:32:36 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14[g/mole] Henrys Constant: 0.1257474[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 8.600e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005477[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003617[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001207
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 400[$\mu g/m^3$] or 106.2[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.217e6[$\mu g/m^3$] or 3.232e5[ppbv]; Ground Water: 3.245e4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 2.948e5[$\mu g/m^3$] or 7.829e4[ppbv]; Ground Water: 2.635e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1.474e5[$\mu g/m^3$] or 3.914e4[ppbv]; Ground Water: 2.540e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:33:06 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1,1-Trichloroethane CAS Number: 71556
Molecular Weight: 133.4[g/mole] Henrys Constant: 0.3648888[unitless]
Diffusivity in Air: 7.800e-2[cm^2/sec] Diffusivity in Water: 8.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 2.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00491[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002982[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001252
Ground Water Attenuation Factor (α_{GW}): 0.00009993
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 2200[$\mu g/m^3$] or 403.5[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 7.428e6[$\mu g/m^3$] or 1.362e6[ppbv]; Ground Water: 7.325e4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 1.757e6[$\mu g/m^3$] or 3.223e5[ppbv]; Ground Water: 6.034e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 8.525e5[$\mu g/m^3$] or 1.564e5[ppbv]; Ground Water: 5.832e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:33:33 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39[g/mole] Henrys Constant: 0.2057688[unitless]
Diffusivity in Air: 7.900e-2[cm^2/sec] Diffusivity in Water: 9.100e-6[cm^2/sec]
Unit Risk Factor: 0.00011[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004973[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003159[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001264
Ground Water Attenuation Factor (α_{GW}): 0.0001058
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.02212[$\mu g/m^3$] or 0.004119[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 73.74[$\mu g/m^3$] or 13.73[ppbv]; Ground Water: 1.244[µg/L]

Best Estimate Target Concentrations
Soil Gas: 17.50[$\mu g/m^3$] or 3.259[ppbv]; Ground Water: 1.017[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 8.521[$\mu g/m^3$] or 1.587[ppbv]; Ground Water: 0.9811[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:34:00 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichlorofluoromethane CAS Number: 75694
Molecular Weight: 137.36[g/mole] Henrys Constant: 2.401299[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 9.700e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005476[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003164[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001059
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 700[$\mu g/m^3$] or 124.7[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.136e6[$\mu g/m^3$] or 3.804e5[ppbv]; Ground Water: 3313.[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 5.160e5[$\mu g/m^3$] or 9.191e4[ppbv]; Ground Water: 2753.[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 2.579e5[$\mu g/m^3$] or 4.594e4[ppbv]; Ground Water: 2665.[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:34:38 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1,2-Trichloro-1,2,2-trifluoroethane CAS Number: 76131
Molecular Weight: 187.38[g/mole] Henrys Constant: 11.0724[unitless]
Diffusivity in Air: 7.800e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 30.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00491[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002816[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001252
Ground Water Attenuation Factor (α_{GW}): 0.00009449
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 30100[$\mu g/m^3$] or 3930[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.017e8[$\mu g/m^3$] or 1.329e7[ppbv]; Ground Water: 3.460e4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 2.404e7[$\mu g/m^3$] or 3.139e6[ppbv]; Ground Water: 2.877e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1.166e7[$\mu g/m^3$] or 1.523e6[ppbv]; Ground Water: 2.786e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:35:07 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.09297282[unitless]
Diffusivity in Air: 6.060e-2[cm^2/sec] Diffusivity in Water: 7.920e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.003815[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002781[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001031
Ground Water Attenuation Factor (α_{GW}): 0.00009332
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 5.95[$\mu g/m^3$] or 1.211[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.541e4[$\mu g/m^3$] or 5172.[ppbv]; Ground Water: 861.3[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 5769.[$\mu g/m^3$] or 1174.[ppbv]; Ground Water: 685.8[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 2620.[$\mu g/m^3$] or 533.4[ppbv]; Ground Water: 658.3[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:35:34 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,3,5-Trimethylbenzene CAS Number: 108678
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.0888963[unitless]
Diffusivity in Air: 6.020e-2[cm^2/sec] Diffusivity in Water: 8.670e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00379[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002852[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001026
Ground Water Attenuation Factor (α_{GW}): 0.00009564
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 5.95[$\mu g/m^3$] or 1.211[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.555e4[$\mu g/m^3$] or 5200.[ppbv]; Ground Water: 884.4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 5799.[$\mu g/m^3$] or 1180.[ppbv]; Ground Water: 699.8[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 2630.[$\mu g/m^3$] or 535.3[ppbv]; Ground Water: 670.8[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:36:22 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5[g/mole] Henrys Constant: 0.7413626[unitless]
Diffusivity in Air: 0.1060[cm^2/sec] Diffusivity in Water: 1.230e-5[cm^2/sec]
Unit Risk Factor: 0.0000088[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003938[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001559
Ground Water Attenuation Factor (α_{GW}): 0.0001311
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.2765[$\mu g/m^3$] or 0.1082[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 702.3[$\mu g/m^3$] or 274.9[ppbv]; Ground Water: 3.433[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 177.4[$\mu g/m^3$] or 69.43[ppbv]; Ground Water: 2.845[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 93.70[$\mu g/m^3$] or 36.68[ppbv]; Ground Water: 2.753[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 15:36:54 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.08789842[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005478[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003933[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.000131
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 7000[$\mu g/m^3$] or 1613[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: Saturation[$\mu g/m^3$] or Saturation[ppbv]; Ground Water: Solubility[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 5.159e6[$\mu g/m^3$] or 1.189e6[ppbv]; Ground Water: Solubility[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 2.579e6[$\mu g/m^3$] or 5.944e5[ppbv]; Ground Water: Solubility[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Table 2: Summary of Soil Gas Laboratory Analytical Results from Proposed Community Center

					Maximum Concentration Detected at Proposed Community Center	BACKWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Risk-based Soil Gas Standards[1]			Explosive Range	
Soil - Gas ID	SB-12	SB-13	SB-14	SB-15		Protective Target Concentration	Best Estimate Target Concentration	Protective Target Concentration	Lower Explosive Limit (LEL) [3]	Upper Explosive Limit (UEL) [3]
Soil Sample Depth[2]	6.0	6.0	6.0	6.0						
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(%)	(%)
USEPA Method T0-15 (VOCs)										
Acetone	80	200	ND	550	550	819,400	291,800	163,100	NA	NA
Benzene	120	**260** [4]	100	ND	**260**	1,557	383	192	NA	NA
2-Butanone (MEK)	26	87	5.1	ND	87	3,444,000	1,121,000	556,400	NA	NA
Carbon disulfide	88	200	28	630	630	2,642,000	664,500	349,000	NA	NA
Carbon tetrachloride	ND	ND	ND	**480**	**480**	920.7	217.7	105.6	NA	NA
Chloromethane (Methyl Chloride)	9.9	8.7	20	ND	20	8,865	2,338	1,297	NA	NA
Cyclohexane	88	37	180	11,000	11,000	NMD	NMD	NMD	NA	NA
1,2-Dichloroethane (Ethylene dichloride)	ND	ND	ND	**100**	**100**	399.6	102.1	53.69	NA	NA
1,1-Dichloroethene (1,1-Dichloroethylene)	5.1	ND	ND	770	770	862,800	217,800	106,000	NA	NA
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	110	19	30	**22,000**	**22,000**	181,300	42,630	20,370	NA	NA
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	28	ND	12	6,900	6,900	377,900	87,910	41,550	NA	NA
Ethylbenzene	30	560	12	**4,000**	**4,000**	13,000	3,057	1,468	NA	NA
4-Ethyltoluene	ND	25	ND	57	57	NMD	NMD	NMD	NA	NA
n-Heptane (Heptane)	250	39	120	6,800	6,800	NMD	NMD	NMD	NA	NA
n-Hexane (Hexane)	280	65	360	9,000	9,000	421,200	127,200	80,350	NA	NA
4-Methyl-2-pentanone (Methylisobutylketone)	ND	5.3	ND	87	87	354,500	95,550	46,120	NA	NA
Styrene	ND	17	ND	100	100	5,344,000	1,251,000	592,300	NA	NA
Tetrachloroethene (Tetrachloroethylene)	ND	ND	ND	84	84	4,961	1,156	549	NA	NA
Toluene	110	300	62	28,000	28,000	1,777,000	430,500	215,200	NA	NA
Trichloroethene (Trichloroethylene)	**83**	**30**	**66**	**2,400**	**2,400**	123.9	29.4	14.32	NA	NA
1,1,2-Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-Trifluoroethane)	15	26	14	ND	26	148,600,000	35,100,000	17,030,000	NA	NA
1,2,4-Trimethylbenzene	8.4	57	ND	150	150	37,090	8,422	3,826	NA	NA
1,3,5-Trimethylbenzene	6.3	61	ND	200	200	37,300	8,466	3,840	NA	NA
2,2,4-Trimethylpentane	ND	ND	170	ND	170	NMD	NMD	NMD	NA	NA
Vinyl chloride	**300**	47	**300**	**150,000**	**150,000** [5]	1,180	298	157.4	NA	NA
m,p-Xylene	26	290	9.0	2,700	2,700	NMD	NMD	NMD	NA	NA
o-Xylene	33	320	7.0	3,000	3,000	Saturation	7,533,000	3,766,000	NA	NA
USEPA Method 8015B	(%)	(%)	(%)	(%)	(%)					
Methane	2.3	0.85	**5.9**	**6.3** [6]	**6.3**	NMD	NMD	NMD	5.0	15.0

Notes:

[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model (http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm). As the proposed community center will be used for commercial purposes, the standard default exposure parameters in the Johnson & Ettinger Vapor Intrusion Model were changed to reflect this use. The list of parameters that were changed can be found in the USEPA Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (RAGS Volume I), dated March 25, 1991, "Summary of Standard Default Exposure Factors", Commercial/Industrial Use, Inhalation of Contaminants Exposure Pathway.

[2] Depths indicated in feet below ground surface (bgs).

[3] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.

[4] Numbers illustrated in **bold** indicate concentrations equal to or above Target Soil Gas Concentrations or within the explosive range for methane.

[5] As indicated by H&P Mobile Geochemistry, the concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

Acronyms:

NA: Not applicable
ND: Not detected
NMD: No model data for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: KLM / 2.23.2007
Checked By: AWB / 2.23.2007

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:22:28 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08[g/mole] Henrys Constant: 0.0008474723[unitless]
Diffusivity in Air: 0.1240[cm^2/sec] Diffusivity in Water: 1.140e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007951[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.005227[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001751
Ground Water Attenuation Factor (α_{GW}): 0.001311
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 511[$\mu g/m^3$] or 215.3[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8.194e5[$\mu g/m^3$] or 3.452e5[ppbv]; Ground Water: 9.795e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2.918e5[$\mu g/m^3$] or 1.229e5[ppbv]; Ground Water: 4.598e5[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.631e5[$\mu g/m^3$] or 6.870e4[ppbv]; Ground Water: 3.363e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:38:18 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11[g/mole] Henrys Constant: 0.1152703[unitless]
Diffusivity in Air: 8.800e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000078[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00554[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000377[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001368
Ground Water Attenuation Factor (α_{GW}): 0.0001257
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.5241[$\mu g/m^3$] or 0.1642[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1577.[$\mu g/m^3$] or 493.9[ppbv]; Ground Water: 44.79[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 383.1[$\mu g/m^3$] or 120.0[ppbv]; Ground Water: 36.19[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 192.1[$\mu g/m^3$] or 60.18[ppbv]; Ground Water: 34.84[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:39:05 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11[g/mole] Henrys Constant: 0.001130542[unitless]
Diffusivity in Air: 8.080e-2[cm^2/sec] Diffusivity in Water: 9.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00518[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.003388[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001303
Ground Water Attenuation Factor (α_{GW}): 0.000938
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1460[$\mu g/m^3$] or 495.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.444e6[$\mu g/m^3$] or 1.169e6[ppbv]; Ground Water: 3.092e6[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.121e6[$\mu g/m^3$] or 3.803e5[ppbv]; Ground Water: 1.377e6[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.564e5[$\mu g/m^3$] or 1.888e5[ppbv]; Ground Water: 9.705e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:39:41 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13[g/mole] Henrys Constant: 0.7157535[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006547[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003847[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001539
Ground Water Attenuation Factor (α_{GW}): 0.0001282
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1022[$\mu g/m^3$] or 328.4[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 2.642e6[$\mu g/m^3$] or 8.490e5[ppbv]; Ground Water: 1.344e4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 6.642e5[$\mu g/m^3$] or 2.134e5[ppbv]; Ground Water: 1.114e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.490e5[$\mu g/m^3$] or 1.122e5[ppbv]; Ground Water: 1.078e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:40:10 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon tetrachloride CAS Number: 56235
Molecular Weight: 153.82[g/mole] Henrys Constant: 0.6464333[unitless]
Diffusivity in Air: 7.800e-2[cm^2/sec] Diffusivity in Water: 8.800e-6[cm^2/sec]
Unit Risk Factor: 0.000015[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00491[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002908[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001252
Ground Water Attenuation Factor (α_{GW}): 0.00009749
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.2725[$\mu g/m^3$] or 0.04335[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 920.7[$\mu g/m^3$] or 146.4[ppbv]; Ground Water: 5.228[μg/L]

Best Estimate Target Concentrations
Soil Gas: 217.7[$\mu g/m^3$] or 34.62[ppbv]; Ground Water: 4.325[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 105.6[$\mu g/m^3$] or 16.80[ppbv]; Ground Water: 4.184[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:40:53 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49[g/mole] Henrys Constant: 0.2477062[unitless]
Diffusivity in Air: 0.1260[cm^2/sec] Diffusivity in Water: 6.500e-6[cm^2/sec]
Unit Risk Factor: 0.000001[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.007931[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0004727[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001749
Ground Water Attenuation Factor (α_{GW}): 0.0001565
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 4.088[$\mu g/m^3$] or 1.981[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8865.[$\mu g/m^3$] or 4296.[ppbv]; Ground Water: 127.3[μg/L]

Best Estimate Target Concentrations
Soil Gas: 2338.[$\mu g/m^3$] or 1133.[ppbv]; Ground Water: 105.4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1297.[$\mu g/m^3$] or 628.7[ppbv]; Ground Water: 102.0[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:42:44 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2-Dichloroethane CAS Number: 107062
Molecular Weight: 98.96[g/mole] Henrys Constant: 0.0196182[unitless]
Diffusivity in Air: 0.1040[cm^2/sec] Diffusivity in Water: 9.900e-6[cm^2/sec]
Unit Risk Factor: 0.000026[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006552[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0007174[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.00154
Ground Water Attenuation Factor (α_{GW}): 0.0002337
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.1572[$\mu g/m^3$] or 0.03887[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 399.6[$\mu g/m^3$] or 98.79[ppbv]; Ground Water: 46.89[μg/L]

Best Estimate Target Concentrations
Soil Gas: 102.1[$\mu g/m^3$] or 25.25[ppbv]; Ground Water: 34.29[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 53.69[$\mu g/m^3$] or 13.27[ppbv]; Ground Water: 32.28[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:43:18 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethylene CAS Number: 75354
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.632751[unitless]
Diffusivity in Air: 9.000e-2[cm^2/sec] Diffusivity in Water: 1.040e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005665[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000336[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.00139
Ground Water Attenuation Factor (α_{GW}): 0.0001123
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 292[$\mu g/m^3$] or 73.7[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 8.628e5[$\mu g/m^3$] or 2.178e5[ppbv]; Ground Water: 4966.[µg/L]

Best Estimate Target Concentrations
Soil Gas: 2.101e5[$\mu g/m^3$] or 5.301e4[ppbv]; Ground Water: 4109.[µg/L]

[2]More Protective Target Concentrations
Soil Gas: 1.060e5[$\mu g/m^3$] or 2.675e4[ppbv]; Ground Water: 3975.[µg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:44:00 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: trans-1,2-Dichloroethylene CAS Number: 156605
Molecular Weight: 96.94[g/mole] Henrys Constant: 0.2127646[unitless]
Diffusivity in Air: 7.070e-2[cm^2/sec] Diffusivity in Water: 1.190e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.07[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004451[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002942[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001163
Ground Water Attenuation Factor (α_{GW}): 0.00009862
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 102.2[$\mu g/m^3$] or 25.79[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.779e5[$\mu g/m^3$] or 9.537e4[ppbv]; Ground Water: 6003.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 8.791e4[$\mu g/m^3$] or 2.219e4[ppbv]; Ground Water: 4871.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 4.155e4[$\mu g/m^3$] or 1.049e4[ppbv]; Ground Water: 4693.[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:40:27 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.1364569[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0.0000011[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004722[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003106[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001216
Ground Water Attenuation Factor (α_{GW}): 0.000104
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 3.716[$\mu g/m^3$] or 0.8564[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.300e4[$\mu g/m^3$] or 2995.[ppbv]; Ground Water: 322.4[μg/L]

Best Estimate Target Concentrations
Soil Gas: 3057.[$\mu g/m^3$] or 704.4[ppbv]; Ground Water: 261.9[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 1468.[$\mu g/m^3$] or 338.2[ppbv]; Ground Water: 252.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:02:18 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18[g/mole] Henrys Constant: 35.82923[unitless]
Diffusivity in Air: 0.2000[cm^2/sec] Diffusivity in Water: 7.770e-6[cm^2/sec]
Unit Risk Factor: 0[($\mu g/m^3$)$^{-1}$] Reference Concentration: 0.2[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.01259[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.000721[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.002296
Ground Water Attenuation Factor (α_{GW}): 0.0002348
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 292[$\mu g/m^3$] or 82.9[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4.212e5[$\mu g/m^3$] or 1.196e5[ppbv]; Ground Water: 41.52[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.272e5[$\mu g/m^3$] or 3.611e4[ppbv]; Ground Water: 34.70[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 8.035e4[$\mu g/m^3$] or 2.281e4[ppbv]; Ground Water: 33.64[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:03:03 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16[g/mole] Henrys Constant: 0.002453269[unitless]
Diffusivity in Air: 7.500e-2[cm^2/sec] Diffusivity in Water: 7.800e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004755[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.001889[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001222
Ground Water Attenuation Factor (α_{GW}): 0.0005711
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 116.8[$\mu g/m^3$] or 28.53[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.545e5[$\mu g/m^3$] or 8.658e4[ppbv]; Ground Water: 1.712e5[μg/L]

Best Estimate Target Concentrations
Soil Gas: 9.555e4[$\mu g/m^3$] or 2.334e4[ppbv]; Ground Water: 8.337e4[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 4.612e4[$\mu g/m^3$] or 1.127e4[ppbv]; Ground Water: 6.698e4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:03:52 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Styrene CAS Number: 100425
Molecular Weight: 104.15[g/mole] Henrys Constant: 0.04638236[unitless]
Diffusivity in Air: 7.100e-2[cm^2/sec] Diffusivity in Water: 8.000e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004471[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003756[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001167
Ground Water Attenuation Factor (α_{GW}): 0.0001252
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 1460[$\mu g/m^3$] or 343[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 5.344e6[$\mu g/m^3$] or 1.255e6[ppbv]; Ground Water: Solubility[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1.251e6[$\mu g/m^3$] or 2.940e5[ppbv]; Ground Water: 2.514e5[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 5.923e5[$\mu g/m^3$] or 1.391e5[ppbv]; Ground Water: 2.398e5[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:04:34 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83[g/mole] Henrys Constant: 0.3362604[unitless]
Diffusivity in Air: 7.200e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0.000003[$(\mu g/m^3)^{-1}$] Reference Concentration: 0[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004532[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002767[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001179
Ground Water Attenuation Factor (α_{GW}): 0.00009288
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 1.363[$\mu g/m^3$] or 0.201[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 4961.[$\mu g/m^3$] or 731.9[ppbv]; Ground Water: 53.04[μg/L]

Best Estimate Target Concentrations
Soil Gas: 1156.[$\mu g/m^3$] or 170.6[ppbv]; Ground Water: 43.63[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 549.0[$\mu g/m^3$] or 80.99[ppbv]; Ground Water: 42.16[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:05:38 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14[g/mole] Henrys Constant: 0.1257474[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 8.600e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005477[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003617[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.0001207
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 584[$\mu g/m^3$] or 155.1[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.777e6[$\mu g/m^3$] or 4.719e5[ppbv]; Ground Water: 4.738e4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 4.305e5[$\mu g/m^3$] or 1.143e5[ppbv]; Ground Water: 3.848e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 2.152e5[$\mu g/m^3$] or 5.714e4[ppbv]; Ground Water: 3.708e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:31:42 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39[g/mole] Henrys Constant: 0.2057688[unitless]
Diffusivity in Air: 7.900e-2[cm^2/sec] Diffusivity in Water: 9.100e-6[cm^2/sec]
Unit Risk Factor: 0.00011[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.004973[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003159[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001264
Ground Water Attenuation Factor (α_{GW}): 0.0001058
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.03716[$\mu g/m^3$] or 0.00692[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 123.9[$\mu g/m^3$] or 23.07[ppbv]; Ground Water: 2.089[μg/L]

Best Estimate Target Concentrations
Soil Gas: 29.40[$\mu g/m^3$] or 5.475[ppbv]; Ground Water: 1.708[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 14.32[$\mu g/m^3$] or 2.666[ppbv]; Ground Water: 1.648[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:06:19 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1,2-Trichloro-1,2,2-trifluoroethane CAS Number: 76131
Molecular Weight: 187.38[g/mole] Henrys Constant: 11.0724[unitless]
Diffusivity in Air: 7.800e-2[cm^2/sec] Diffusivity in Water: 8.200e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 30.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00491[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002816[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001252
Ground Water Attenuation Factor (α_{GW}): 0.00009449
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 43950[$\mu g/m^3$] or 5738[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1.486e8[$\mu g/m^3$] or 1.940e7[ppbv]; Ground Water: 5.052e4[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 3.510e7[$\mu g/m^3$] or 4.583e6[ppbv]; Ground Water: 4.200e4[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 1.703e7[$\mu g/m^3$] or 2.224e6[ppbv]; Ground Water: 4.068e4[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:07:01 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.09297282[unitless]
Diffusivity in Air: 6.060e-2[cm^2/sec] Diffusivity in Water: 7.920e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.003815[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002781[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001031
Ground Water Attenuation Factor (α_{GW}): 0.00009332
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 8.687[$\mu g/m^3$] or 1.768[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.709e4[$\mu g/m^3$] or 7550.[ppbv]; Ground Water: 1258.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 8422.[$\mu g/m^3$] or 1714.[ppbv]; Ground Water: 1001.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3826.[$\mu g/m^3$] or 778.7[ppbv]; Ground Water: 961.1[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:07:37 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,3,5-Trimethylbenzene CAS Number: 108678
Molecular Weight: 120.2[g/mole] Henrys Constant: 0.0888963[unitless]
Diffusivity in Air: 6.020e-2[cm^2/sec] Diffusivity in Water: 8.670e-6[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.00379[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0002852[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001026
Ground Water Attenuation Factor (α_{GW}): 0.00009564
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 8.687[$\mu g/m^3$] or 1.768[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 3.730e4[$\mu g/m^3$] or 7592.[ppbv]; Ground Water: 1291.[μg/L]

Best Estimate Target Concentrations
Soil Gas: 8466.[$\mu g/m^3$] or 1723.[ppbv]; Ground Water: 1022.[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3840.[$\mu g/m^3$] or 781.5[ppbv]; Ground Water: 979.4[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 16:17:28 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5[g/mole] Henrys Constant: 0.7413626[unitless]
Diffusivity in Air: 0.1060[cm^2/sec] Diffusivity in Water: 1.230e-5[cm^2/sec]
Unit Risk Factor: 0.0000088[$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 25 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.006672[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003938[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001559
Ground Water Attenuation Factor (α_{GW}): 0.0001311
Target Concentrations are based on CANCER risk.
Target Indoor Air Concentration: 0.4645[$\mu g/m^3$] or 0.1818[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: 1180.[$\mu g/m^3$] or 461.9[ppbv]; Ground Water: 5.768[$\mu g/L$]

Best Estimate Target Concentrations
Soil Gas: 298.0[$\mu g/m^3$] or 116.6[ppbv]; Ground Water: 4.779[$\mu g/L$]

[2]More Protective Target Concentrations
Soil Gas: 157.4[$\mu g/m^3$] or 61.62[ppbv]; Ground Water: 4.625[$\mu g/L$]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

TARGET MEDIA CONCENTRATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 17:08:20 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite.htm
Depth to contamination from bottom of foundation: 6ft +/- 1ft
Average ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17[g/mole] Henrys Constant: 0.08789842[unitless]
Diffusivity in Air: 8.700e-2[cm^2/sec] Diffusivity in Water: 1.000e-5[cm^2/sec]
Unit Risk Factor: 0[$(\mu g/m^3)^{-1}$] Reference Concentration: 7[mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375[m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]
Risk Factor for carcinogens: 1E-6 Target Hazard Quotient for non-carcinogens: 1

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficients:
Unsaturated Zone(D_{eff}): 0.005478[cm^2/s]
Unsaturated Zone + Capillary Zone (D^T_{eff}): 0.0003933[cm^2/s]

Soil Gas Attenuation Factor (α_{SG}): 0.001357
Ground Water Attenuation Factor (α_{GW}): 0.000131
Target Concentrations are based on NON-CANCER risk.
Target Indoor Air Concentration: 10220[$\mu g/m^3$] or 2355[ppbv]

[1]Less Protective Target Concentrations
Soil Gas: Saturation[$\mu g/m^3$] or Saturation[ppbv]; Ground Water: Solubility[μg/L]

Best Estimate Target Concentrations
Soil Gas: 7.533e6[$\mu g/m^3$] or 1.736e6[ppbv]; Ground Water: Solubility[μg/L]

[2]More Protective Target Concentrations
Soil Gas: 3.766e6[$\mu g/m^3$] or 8.678e5[ppbv]; Ground Water: Solubility[μg/L]

Based on parameter analysis: Advection is the dominant mechanism across foundation. Diffusion through soil is the overall rate-limiting process for groundwater to indoor-air pathway.

[1]"Less Protective" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"More Protective" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

Table 3: Summary of Soil Gas Laboratory Analytical Results from Proposed Community Center & OSHA PELs

					Maximum Concentration Detected at Proposed Community Center	FORWARD Results of Johnson & Ettinger Vapor Intrusion Model - Estimated Indoor Air Concentrations[1]			OSHA Permissible Exposure Limits (PELs) for Air Contaminants[2]
Soil - Gas ID	SB-12	SB-13	SB-14	SB-15					
Soil Sample Depth[3]	6.0	6.0	6.0	6.0		Low Prediction	Best Estimate	High Prediction	
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)
USEPA Method T0-15 (VOCs)									
Acetone	80	200	ND	550	550	0.343	0.9632	1.723	2,400,000
Benzene	120	260	100	ND	260	0.08641	0.3557	0.7092	3,190
2-Butanone (MEK)	26	87	5.1	ND	87	0.03688	0.1133	0.2283	590,000
Carbon disulfide	88	200	28	630	630	0.2437	0.9694	1.845	62,200
Carbon tetrachloride	ND	ND	ND	480	480	0.1421	0.6009	1.239	62,900
Chloromethane (Methyl Chloride)	9.9	8.7	20	ND	20	0.00922	0.03497	0.06302	207,000
Cyclohexane	88	37	180	11,000	11,000	NMD	NMD	NMD	1,050,000
1,2-Dichloroethane (Ethylene dichloride)	ND	ND	ND	100	100	0.03935	0.154	0.2928	405,000
1,1-Dichloroethene (1,1-Dichloroethylene)	5.1	ND	ND	770	770	0.2606	1.07	2.121	NPEL
cis-1,2-Dichloroethene (cis-1,.2-Dichloroethylene)	110	19	30	22,000	22,000	1.945	8.272	17.31	NPEL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	28	ND	12	6,900	6,900	1.866	8.022	16.97	NPEL
Ethylbenzene	30	560	12	4,000	4,000	1.144	4.863	10.13	435,000
4-Ethyltoluene	ND	25	ND	57	57	NMD	NMD	NMD	NPEL
n-Heptane (Heptane)	250	39	120	6,800	6,800	NMD	NMD	NMD	2,000,000
n-Hexane (Hexane)	280	65	360	9,000	9,000	6.24	20.66	32.71	1,800,000
4-Methyl-2-pentanone (Methylisobutylketone)	ND	5.3	ND	87	87	0.02867	0.1063	0.2203	410,000
Styrene	ND	17	ND	100	100	0.02732	0.1167	0.2465	426,000
Tetrachloroethene (Tetrachloroethylene)	ND	ND	ND	84	84	0.02307	0.09902	0.2085	678,000
Toluene	110	300	62	28,000	28,000	9.021	37.99	75.99	754,000
Trichloroethene (Trichloroethylene)	83	30	66	2,400	2,400	0.72	3.034	6.231	678,000
1,1,2-Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-Trifluoroethar	15	26	14	ND	26	0.00769	0.03255	0.06709	760,000
1,2,4-Trimethylbenzene	8.4	57	ND	150	150	0.03513	0.1547	0.3406	NPEL
1,3,5-Trimethylbenzene	6.3	61	ND	200	200	0.04658	0.2052	0.4525	NPEL
2,2,4-Trimethylpentane	ND	ND	170	ND	170	NMD	NMD	NMD	NPEL
Vinyl chloride	300	47	300	150,000 [5]	150,000	59.06	223.8	442.6	2,560
m,p-Xylene	26	290	9.0	2,700	2,700	NMD	NMD	NMD	435,000
o-Xylene	33	320	7.0	3,000	3,000	0.9878	4.07	8.14200	435,000
USEPA Method 8015B	(%)	(%)	(%)	(%)	(%)				
Methane	2.3	0.85	5.9	6.3	6.3	NMD	NMD	NMD	NPEL

Notes:

[1] Results based upon the calculation in the USEPA's Screening Level Implementation of the Johnson and Ettinger Vapor Intrusion Model and the known maximum concentration detected at the proposed Community Center (http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm). As the proposed community center will be used for commercial purposes, the standard default exposure parameters in the Johnson & Ettinger Vapor Intrusion Model were changed to reflect this use. The list of parameters that were changed can be found in the USEPA Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (RAGS Volume I), dated March 25, 1991, "Summary of Standard Default Exposure Factors", Commercial/Industrial Use, Inhalation of Contaminants Exposure Pathway.

[2] As identified in 29 Code of Federal Regulations (CFR) Part 1910 Occupational Safety and Health Standards "Limits for Air Contaminants" Tables Z-1 and Z-2. The Permissible Exposure Limits (PELs) are 8-hr time weighted averages (TWAs).

[3] Depths indicated in feet below ground surface (bgs).

[4] According to the National Fire Protection Association, the LEL for methane is 5.0% , while the UEL is 15%.

[5] As indicated by H&P Mobile Geochemistry, the concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

Acronyms:

OSHA: Occupational Health and Safety Administration
NA: Not applicable
ND: Not detected
NMD: No model data for constituent
NPEL: No PEL for constituent
ug/m^3: micrograms per cubic meter
USEPA: United States Environmental Protection Agency
VOCs: Volatile organic compounds

Prepared By: KLM / 2.23.2007
Checked By: AWB / 2.23.2007

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:46:08 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 550[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Acetone CAS Number: 67641
Molecular Weight: 58.08 [g/mole] Henrys Constant: 0.0008474723 [unitless]
Diffusivity in Air: 0.1240 [cm^2/sec] Diffusivity in Water: 1.140e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.35 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.007951[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001751

[1]Low Indoor Air Prediction: 0.3430 [$\mu g/m^3$] or 0.1445 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 6.712e-4

Best Estimate Indoor Air Prediction: 0.9632[$\mu g/m^3$] or 0.4057 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.001885

[2]High Indoor Air Prediction: 1.723[$\mu g/m^3$] or 0.7259 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.003372

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:47:49 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 260[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Benzene CAS Number: 71432
Molecular Weight: 78.11 [g/mole] Henrys Constant: 0.1152703 [unitless]
Diffusivity in Air: 8.800e-2 [cm^2/sec] Diffusivity in Water: 9.800e-6 [cm^2/sec]
Unit Risk Factor: 0.0000078 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.00554[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001368

[1]Low Indoor Air Prediction: 0.08641 [$\mu g/m^3$] or 0.02707 [ppbv]
Cancer Risk of this concentration: 1.649e-7 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.3557[$\mu g/m^3$] or 0.1114 [ppbv]
Cancer Risk of this concentration: 6.786e-7 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 0.7092[$\mu g/m^3$] or 0.2221 [ppbv]
Cancer Risk of this concentration: 1.353e-6 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:48:44 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 87[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylethylketone (2-butanone) CAS Number: 78933
Molecular Weight: 72.11 [g/mole] Henrys Constant: 0.001130542 [unitless]
Diffusivity in Air: 8.080e-2 [cm^2/sec] Diffusivity in Water: 9.800e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 1 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.00518[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001303

[1]Low Indoor Air Prediction: 0.03688 [$\mu g/m^3$] or 0.01251 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 2.526e-5

Best Estimate Indoor Air Prediction: 0.1133[$\mu g/m^3$] or 0.03845 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.762e-5

[2]High Indoor Air Prediction: 0.2283[$\mu g/m^3$] or 0.07746 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.564e-4

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:51:03 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 630[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon disulfide CAS Number: 75150
Molecular Weight: 76.13 [g/mole] Henrys Constant: 0.7157535 [unitless]
Diffusivity in Air: 0.1040 [cm^2/sec] Diffusivity in Water: 1.000e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.7 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.006547[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001539

[1]Low Indoor Air Prediction: 0.2437 [$\mu g/m^3$] or 0.07832 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 2.385e-4

Best Estimate Indoor Air Prediction: 0.9694[$\mu g/m^3$] or 0.3115 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 9.485e-4

[2]High Indoor Air Prediction: 1.845[$\mu g/m^3$] or 0.5929 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.001805

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:51:38 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 480[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Carbon tetrachloride CAS Number: 56235
Molecular Weight: 153.82 [g/mole] Henrys Constant: 0.6464333 [unitless]
Diffusivity in Air: 7.800e-2 [cm^2/sec] Diffusivity in Water: 8.800e-6 [cm^2/sec]
Unit Risk Factor: 0.000015 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.00491[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001252

[1]Low Indoor Air Prediction: 0.1421 [$\mu g/m^3$] or 0.02260 [ppbv]
Cancer Risk of this concentration: 5.213e-7 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.6009[$\mu g/m^3$] or 0.09558 [ppbv]
Cancer Risk of this concentration: 2.205e-6 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 1.239[$\mu g/m^3$] or 0.1970 [ppbv]
Cancer Risk of this concentration: 4.545e-6 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:52:16 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 20[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methyl chloride (chloromethane) CAS Number: 74873
Molecular Weight: 50.49 [g/mole] Henrys Constant: 0.2477062 [unitless]
Diffusivity in Air: 0.1260 [cm^2/sec] Diffusivity in Water: 6.500e-6 [cm^2/sec]
Unit Risk Factor: 0.000001 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.09 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.007931[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001749

[1]Low Indoor Air Prediction: 0.009223 [$\mu g/m^3$] or 0.004469 [ppbv]
Cancer Risk of this concentration: 2.256e-9 Hazard Risk of this concentration: 7.019e-5

Best Estimate Indoor Air Prediction: 0.03497[$\mu g/m^3$] or 0.01695 [ppbv]
Cancer Risk of this concentration: 8.554e-9 Hazard Risk of this concentration: 2.661e-4

[2]High Indoor Air Prediction: 0.06302[$\mu g/m^3$] or 0.03054 [ppbv]
Cancer Risk of this concentration: 1.542e-8 Hazard Risk of this concentration: 4.796e-4

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:56:16 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 100[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2-Dichloroethane CAS Number: 107062
Molecular Weight: 98.96 [g/mole] Henrys Constant: 0.0196182 [unitless]
Diffusivity in Air: 0.1040 [cm^2/sec] Diffusivity in Water: 9.900e-6 [cm^2/sec]
Unit Risk Factor: 0.000026 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.006552[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.00154

[1]Low Indoor Air Prediction: 0.03935 [$\mu g/m^3$] or 0.009728 [ppbv]
Cancer Risk of this concentration: 2.503e-7 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.1540[$\mu g/m^3$] or 0.03806 [ppbv]
Cancer Risk of this concentration: 9.792e-7 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 0.2928[$\mu g/m^3$] or 0.07240 [ppbv]
Cancer Risk of this concentration: 1.863e-6 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:57:12 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 100[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2-Dichloroethane CAS Number: 107062
Molecular Weight: 98.96 [g/mole] Henrys Constant: 0.0196182 [unitless]
Diffusivity in Air: 0.1040 [cm^2/sec] Diffusivity in Water: 9.900e-6 [cm^2/sec]
Unit Risk Factor: 0.000026 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.006552[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.00154

[1]Low Indoor Air Prediction: 0.03935 [$\mu g/m^3$] or 0.009728 [ppbv]
Cancer Risk of this concentration: 2.503e-7 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.1540[$\mu g/m^3$] or 0.03806 [ppbv]
Cancer Risk of this concentration: 9.792e-7 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 0.2928[$\mu g/m^3$] or 0.07240 [ppbv]
Cancer Risk of this concentration: 1.863e-6 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

```
Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.
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INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:58:22 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 770[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,1-Dichloroethylene CAS Number: 75354
Molecular Weight: 96.94 [g/mole] Henrys Constant: 0.632751 [unitless]
Diffusivity in Air: 9.000e-2 [cm^2/sec] Diffusivity in Water: 1.040e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005665[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.00139

[1]Low Indoor Air Prediction: 0.2606 [$\mu g/m^3$] or 0.06577 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 8.924e-4

Best Estimate Indoor Air Prediction: 1.070[$\mu g/m^3$] or 0.2702 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.003666

[2]High Indoor Air Prediction: 2.121[$\mu g/m^3$] or 0.5354 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.007265

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 18:59:33 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 6900[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: cis-1,2-Dichloroethylene CAS Number: 156592
Molecular Weight: 96.94 [g/mole] Henrys Constant: 0.08772779 [unitless]
Diffusivity in Air: 7.360e-2 [cm^2/sec] Diffusivity in Water: 1.130e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.035 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004634[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001199

[1]Low Indoor Air Prediction: 1.945 [$\mu g/m^3$] or 0.4909 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.03807

Best Estimate Indoor Air Prediction: 8.272[$\mu g/m^3$] or 2.088 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.1619

[2]High Indoor Air Prediction: 17.31[$\mu g/m^3$] or 4.370 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.3388

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:00:42 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 4000[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Ethylbenzene CAS Number: 100414
Molecular Weight: 106.17 [g/mole] Henrys Constant: 0.1364569 [unitless]
Diffusivity in Air: 7.500e-2 [cm^2/sec] Diffusivity in Water: 7.800e-6 [cm^2/sec]
Unit Risk Factor: 0.0000011 [$(\mu g/m^3)^{-1}$] Reference Concentration: 1 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004722[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001216

[1]Low Indoor Air Prediction: 1.144 [$\mu g/m^3$] or 0.2635 [ppbv]
Cancer Risk of this concentration: 3.077e-7 Hazard Risk of this concentration: 7.833e-4

Best Estimate Indoor Air Prediction: 4.863[$\mu g/m^3$] or 1.121 [ppbv]
Cancer Risk of this concentration: 1.309e-6 Hazard Risk of this concentration: 0.003331

[2]High Indoor Air Prediction: 10.13[$\mu g/m^3$] or 2.334 [ppbv]
Cancer Risk of this concentration: 2.726e-6 Hazard Risk of this concentration: 0.006938

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:01:25 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 9000[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Hexane CAS Number: 110543
Molecular Weight: 86.18 [g/mole] Henrys Constant: 35.82923 [unitless]
Diffusivity in Air: 0.2000 [cm^2/sec] Diffusivity in Water: 7.770e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.2 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.01259[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.002296

[1]Low Indoor Air Prediction: 6.240 [$\mu g/m^3$] or 1.771 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.02137

Best Estimate Indoor Air Prediction: 20.66[$\mu g/m^3$] or 5.866 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.07077

[2]High Indoor Air Prediction: 32.71[$\mu g/m^3$] or 9.285 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.1120

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:02:42 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 87[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Methylisobutylketone (4-methyl-2-pentanone) CAS Number: 108101
Molecular Weight: 100.16 [g/mole] Henrys Constant: 0.002453269 [unitless]
Diffusivity in Air: 7.500e-2 [cm^2/sec] Diffusivity in Water: 7.800e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.08 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004755[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001222

[1]Low Indoor Air Prediction: 0.02867 [$\mu g/m^3$] or 0.007003 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 2.455e-4

Best Estimate Indoor Air Prediction: 0.1063[$\mu g/m^3$] or 0.02598 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 9.105e-4

[2]High Indoor Air Prediction: 0.2203[$\mu g/m^3$] or 0.05382 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.001886

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:03:20 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 100[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Styrene CAS Number: 100425
Molecular Weight: 104.15 [g/mole] Henrys Constant: 0.04638236 [unitless]
Diffusivity in Air: 7.100e-2 [cm^2/sec] Diffusivity in Water: 8.000e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 1 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004471[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001167

[1]Low Indoor Air Prediction: 0.02732 [$\mu g/m^3$] or 0.006417 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.871e-5

Best Estimate Indoor Air Prediction: 0.1167[$\mu g/m^3$] or 0.02740 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.990e-5

[2]High Indoor Air Prediction: 0.2465[$\mu g/m^3$] or 0.05790 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.688e-4

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:03:20 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 100[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Styrene CAS Number: 100425
Molecular Weight: 104.15 [g/mole] Henrys Constant: 0.04638236 [unitless]
Diffusivity in Air: 7.100e-2 [cm^2/sec] Diffusivity in Water: 8.000e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 1 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004471[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001167

[1]Low Indoor Air Prediction: 0.02732 [$\mu g/m^3$] or 0.006417 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.871e-5

Best Estimate Indoor Air Prediction: 0.1167[$\mu g/m^3$] or 0.02740 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.990e-5

[2]High Indoor Air Prediction: 0.2465[$\mu g/m^3$] or 0.05790 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 1.688e-4

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:04:07 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 84[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Tetrachloroethylene CAS Number: 127184
Molecular Weight: 165.83 [g/mole] Henrys Constant: 0.3362604 [unitless]
Diffusivity in Air: 7.200e-2 [cm^2/sec] Diffusivity in Water: 8.200e-6 [cm^2/sec]
Unit Risk Factor: 0.000003 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004532[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001179

[1]Low Indoor Air Prediction: 0.02307 [$\mu g/m^3$] or 0.003404 [ppbv]
Cancer Risk of this concentration: 1.693e-8 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.09902[$\mu g/m^3$] or 0.01461 [ppbv]
Cancer Risk of this concentration: 7.266e-8 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 0.2085[$\mu g/m^3$] or 0.03076 [ppbv]
Cancer Risk of this concentration: 1.530e-7 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:04:55 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 28000[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Toluene CAS Number: 108883
Molecular Weight: 92.14 [g/mole] Henrys Constant: 0.1257474 [unitless]
Diffusivity in Air: 8.700e-2 [cm^2/sec] Diffusivity in Water: 8.600e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.4 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005477[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001357

[1]Low Indoor Air Prediction: 9.201 [$\mu g/m^3$] or 2.443 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.01576

Best Estimate Indoor Air Prediction: 37.99[$\mu g/m^3$] or 10.09 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.06505

[2]High Indoor Air Prediction: 75.99[$\mu g/m^3$] or 20.18 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.1301

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:05:39 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 2400[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Trichloroethylene CAS Number: 79016
Molecular Weight: 131.39 [g/mole] Henrys Constant: 0.2057688 [unitless]
Diffusivity in Air: 7.900e-2 [cm^2/sec] Diffusivity in Water: 9.100e-6 [cm^2/sec]
Unit Risk Factor: 0.00011 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.04 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.004973[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001264

[1]Low Indoor Air Prediction: 0.7200 [$\mu g/m^3$] or 0.1341 [ppbv]
Cancer Risk of this concentration: 1.937e-5 Hazard Risk of this concentration: 0.01233

Best Estimate Indoor Air Prediction: 3.034[$\mu g/m^3$] or 0.5649 [ppbv]
Cancer Risk of this concentration: 8.163e-5 Hazard Risk of this concentration: 0.05194

[2]High Indoor Air Prediction: 6.231[$\mu g/m^3$] or 1.160 [ppbv]
Cancer Risk of this concentration: 1.677e-4 Hazard Risk of this concentration: 0.1067

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:06:51 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 150[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,2,4-Trimethylbenzene CAS Number: 95636
Molecular Weight: 120.2 [g/mole] Henrys Constant: 0.09297282 [unitless]
Diffusivity in Air: 6.060e-2 [cm^2/sec] Diffusivity in Water: 7.920e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.003815[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001031

[1]Low Indoor Air Prediction: 0.03513 [$\mu g/m^3$] or 0.007150 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.004044

Best Estimate Indoor Air Prediction: 0.1547[$\mu g/m^3$] or 0.03149 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.01781

[2]High Indoor Air Prediction: 0.3406[$\mu g/m^3$] or 0.06933 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.03921

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:07:46 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 200[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: 1,3,5-Trimethylbenzene CAS Number: 108678
Molecular Weight: 120.2 [g/mole] Henrys Constant: 0.0888963 [unitless]
Diffusivity in Air: 6.020e-2 [cm^2/sec] Diffusivity in Water: 8.670e-6 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.00595 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.00379[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001026

[1]Low Indoor Air Prediction: 0.04658 [$\mu g/m^3$] or 0.009481 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.005362

Best Estimate Indoor Air Prediction: 0.2052[$\mu g/m^3$] or 0.04177 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.02362

[2]High Indoor Air Prediction: 0.4525[$\mu g/m^3$] or 0.09210 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.05209

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:08:30 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 150000[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: Vinyl chloride (chloroethene) CAS Number: 75014
Molecular Weight: 62.5 [g/mole] Henrys Constant: 0.7413626 [unitless]
Diffusivity in Air: 0.1060 [cm^2/sec] Diffusivity in Water: 1.230e-5 [cm^2/sec]
Unit Risk Factor: 0.0000088 [$(\mu g/m^3)^{-1}$] Reference Concentration: 0.1 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.006672[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001559

[1]Low Indoor Air Prediction: 59.06 [$\mu g/m^3$] or 23.12 [ppbv]
Cancer Risk of this concentration: 1.271e-4 Hazard Risk of this concentration: 0.4045

Best Estimate Indoor Air Prediction: 233.8[$\mu g/m^3$] or 91.54 [ppbv]
Cancer Risk of this concentration: 5.034e-4 Hazard Risk of this concentration: 1.602

[2]High Indoor Air Prediction: 442.6[$\mu g/m^3$] or 173.3 [ppbv]
Cancer Risk of this concentration: 9.529e-4 Hazard Risk of this concentration: 3.032

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Lyons Landfill
Report Date: Mon Feb 19 19:09:26 CST 2007
Report Generated From: http://www.epa.gov/athens/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 3000[$\mu g/m^3$]
Depth of soil gas sample: 6ft +/- 1ft
Average soil/ground water temperature: 50F

CHEMICAL PROPERTIES
Chemical of Concern: o-Xylene CAS Number: 95476
Molecular Weight: 106.17 [g/mole] Henrys Constant: 0.08789842 [unitless]
Diffusivity in Air: 8.700e-2 [cm^2/sec] Diffusivity in Water: 1.000e-5 [cm^2/sec]
Unit Risk Factor: 0 [$(\mu g/m^3)^{-1}$] Reference Concentration: 7 [mg/m^3]

SOIL PROPERTIES
Soil Type: Loam Total Porosity: 0.399
Unsaturated Zone Moisture Content:
low= 0.061 best estimate= 0.148 high= 0.24
Capillary Zone Moisture Content: 0.332 Height of Capillary Rise: 0.375 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 25 [years] non-carcinogens: 25 [years]
Exposure Frequency: carcinogens 250 [days/year] non-carcinogens: 250 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 25 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005478[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.001357

[1]Low Indoor Air Prediction: 0.9878 [$\mu g/m^3$] or 0.2276 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 9.665e-5

Best Estimate Indoor Air Prediction: 4.070[$\mu g/m^3$] or 0.9380 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 3.983e-4

[2]High Indoor Air Prediction: 8.142[$\mu g/m^3$] or 1.876 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 7.967e-4

Based on parameter analysis: Advection is the dominant mechanism across foundation.

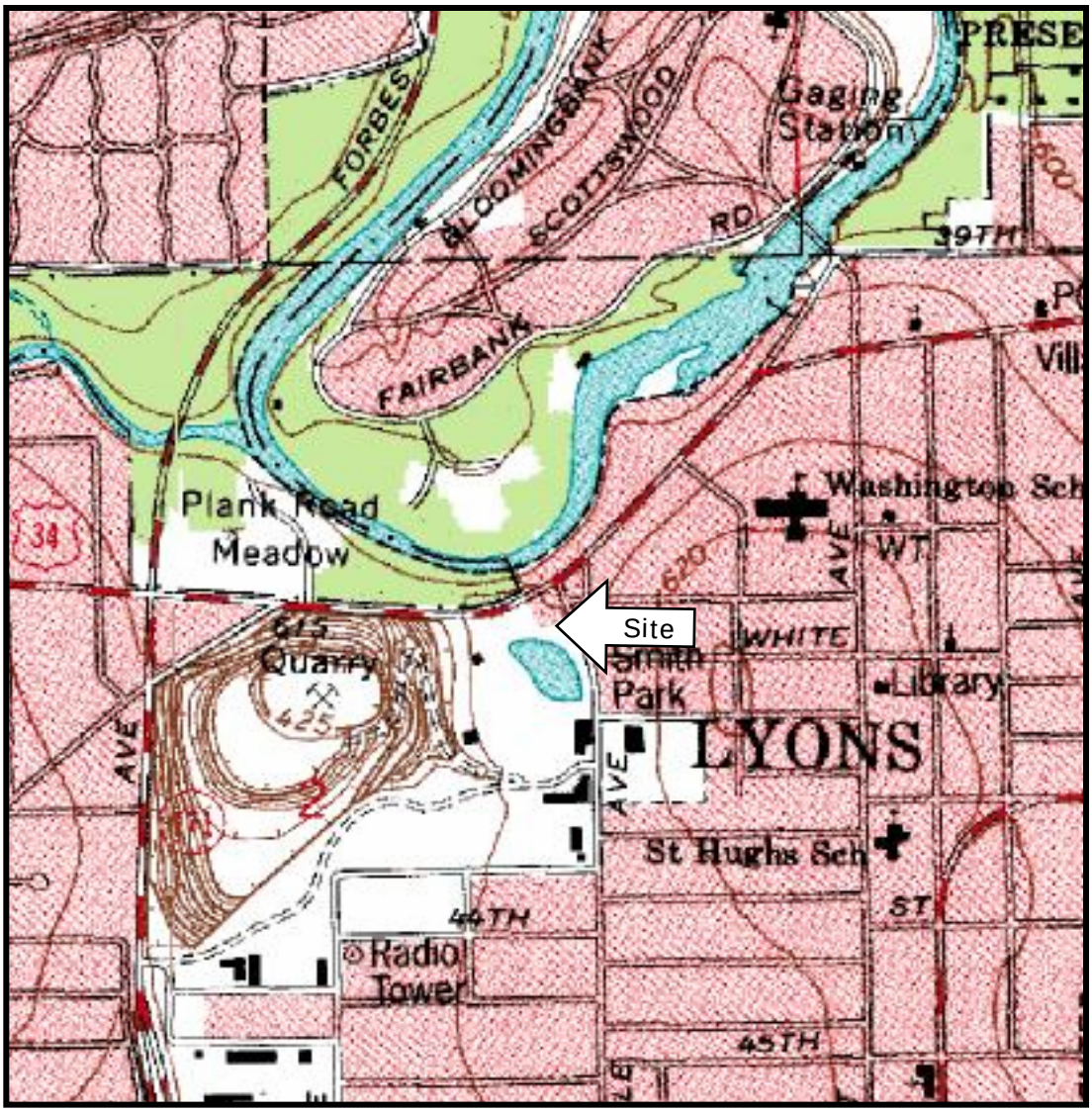
[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

Exposure Frequency for carcinogens has been changed from default value of 350 days/year.
Exposure Duration for carcinogens has been changed from default value of 30 years.
Exposure Frequency for non-carcinogens has been changed from default value of 365 days/year.

FIGURES

Source: U.S. Geological Survey Brookfield, Illinois Quadrangle
7.5 Minute Series (Topographic), Dated 1992.

N



0 1/4 1/2 1 MILE

0 1000 3000 5000 FT

Quadrangle Location

Prepared by/Date: HJZ / 02.28.07
Checked by/Date: KLM / 02.28.07

Village of Lyons Lyons Landfill Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Location Map Project 0236901 Figure 1

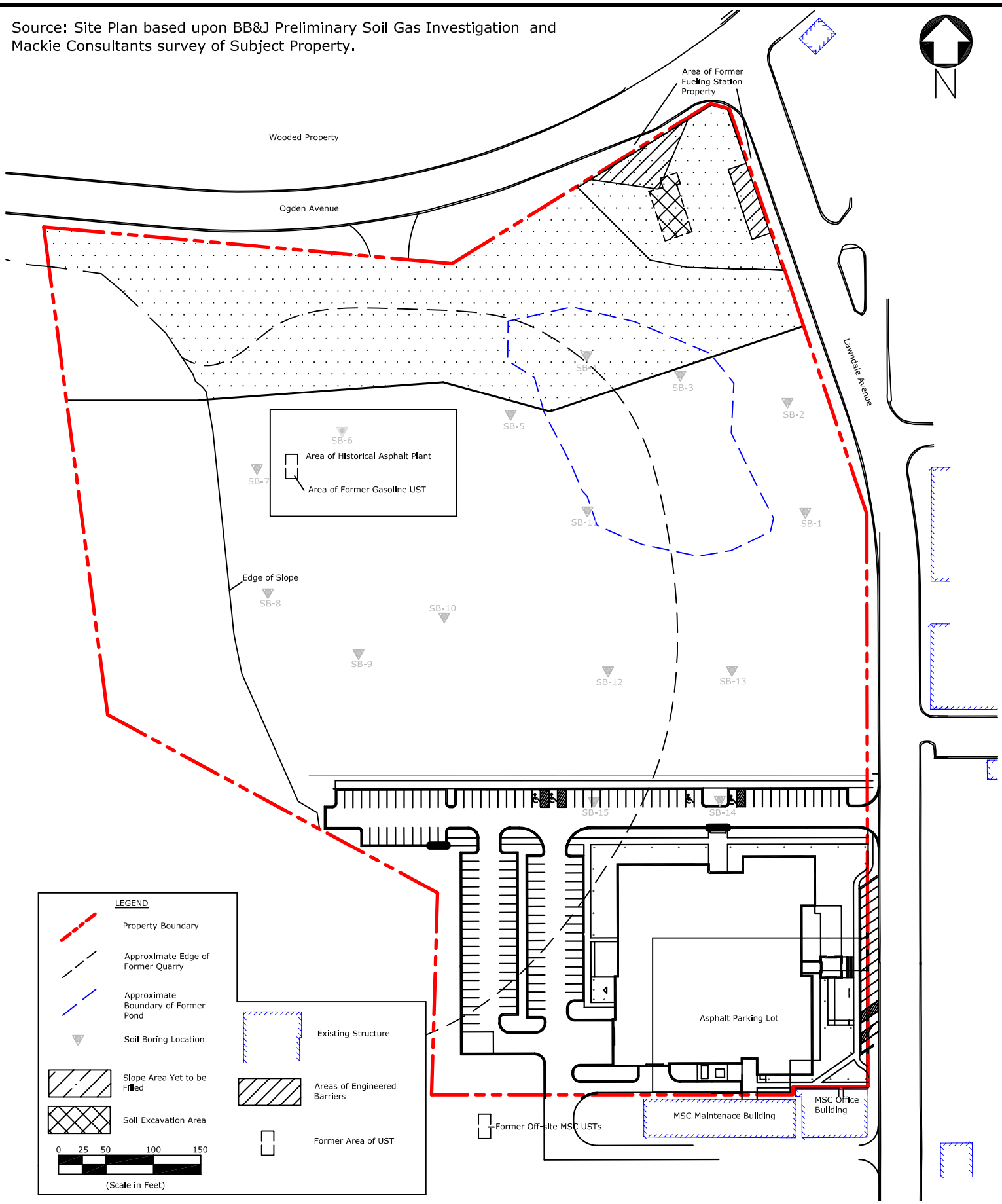
Based on site reconnaissance by Ms. Michele Hargraeves and Mr. Kevin McCartney of Bradburne, Briller & Johnson, LLC on February 1 and 2, 2007.

NOT TO SCALE

Prepared by/Date: MLH / 02.07.07
Checked by/Date: AWB / 02.XX.07

Village of Lyons Lyons Landfill Southwest Corner of Ogden and Lawndale Avenues Lyons, Illinois	Bradburne, Briller & Johnson, LLC	Site Plan with Soil Gas Survey Locations Project 0236901 Figure 2

Source: Site Plan based upon BB&J Preliminary Soil Gas Investigation and Mackie Consultants survey of Subject Property.



Prepared by/Date: KLM / 9-11-2007
Checked by/Date: JTB / 10-15-2007

Village of Lyons Southwest Intersection of Ogden and Lawndale Avenues Lyons, IL	Bradburne, Briller & Johnson, LLC www.bbjgroup.com	Site Base Map Project No. 0236901 Figure 3

APPENDIX A

FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

The media targeted by this subsurface assessment and the sampling methods and protocol are described in this appendix.

A.1 Sampling Equipment

The following sampling equipment was used during field activities at the Subject Property:

- Geoprobe® direct-push technology (DPT) sampling equipment;
- Laboratory-supplied 400-milileter summa canisters for the collection of soil-gas samples targeted for laboratory analyses;
- Phosphate-free soap, potable water and distilled water for equipment cleaning;
- Laboratory-supplied deionized water (purge water) for the preparation of quality assurance/quality control (QA/QC) samples;
- Disposable latex and/or nitrile gloves;
- Sample shipping containers (e.g., coolers); and,
- Sealed trip blanks, prepared by the laboratory using deionized water and shipped with the sample coolers.

A.2 Soil Boring/Soil Probe Advancement and Soil Sampling Procedures

This section describes the various types of soil probe and/or soil probe techniques that were used, as well as specific soil sample collection procedures.

A.2.1 DPT Advancement Procedures

A Geoprobe® DPT sampling machine was used to collect soil samples from the soil probes. The machine advances a soil probe by means of a hydraulic hammer that drove the sampler vertically into the ground. Soil samples were collected using a 1.5-inch diameter, 36-inch or 48-inch long sampling tube with dedicated, disposable acetate liners. Use of a releasable plunger inside the tube allows the sampler to be advanced to the desired depth and a discrete sample to be collected.

A.2.2 Soil-Gas Sample Screening and Collection Procedures

The samples were obtained from a 2-inch diameter probe hole created by a track-mounted Geoprobe® drill rig. The Geoprobe® sampler with a solid point was advanced to a depth of approximately five feet bgs then was retracted approximately six inches. Dedicated ¼-inch diameter poly tubing was then inserted through the rods through a discrete sampling point to the six-inch space created by the retracting of the sampler. The dedicated tubing then extended from the six-inch space up through the rods and approximately four feet beyond. This tubing was then connected to a 60 milliliter plastic syringe with a three-way valve. Three times the dead volume, approximately four milliliters per foot or a total of 40 milliliters, was then purged using the syringe. After purging, the syringe was then disconnected. The canister was then connected to the tubing using a ¼-inch swagelok fitting. Leak tracer, consisting of

isopropyl alcohol, was then sprayed on paper towels and the towels were placed around the base of the rods where they entered the ground and around the sampling assembly (i.e., the poly tubing and swagelok connection). The valve was then opened on the canister and the reading on the vacuum gauge was then recorded. If the gauge read at least -25 inches of mercury, the canister was allowed to fill. When the gauge read zero inches of mercury the canister was disconnected, the canister was labeled with a ball point pen, wrapped in bubble wrap, and returned to the box in which it was shipped.

A.3 Probehole Abandonment

Following the advancement of the soil probes, the probeholes were backfilled with bentonite chips to approximately 6 inches below ground surface (bgs) inside the Subject Property. The surface above the probehole was then patched with asphalt or concrete, as necessary, to restore the original surface.

A.4 Quality Assurance/Quality Control

The following sections outline QA/QC protocol, sample containers, sample preservation, sample identification and chain-of-custody procedures implemented during sampling activities.

A.4.1 QA/QC Samples

Trip Blanks

Trip blank samples that consisted of de-ionized water, provided by the analytical laboratory, accompanied the cooler(s) containing the samples from the laboratory, to the field and back to the laboratory. The trip blanks were used to assess potential cross-contamination from the cooler and handling practices, in addition to assessing potential cross-contamination between samples. Trip blanks were analyzed for USEPA method To-15. One trip blank was analyzed per cooler.

A.4.2 Sample Containers and Preservation

Sample containers prepared by a commercial vendor were provided by the laboratory.

A.4.3 Sample Identification

Prior to sample collection, the appropriate container (with preservative, if applicable) was labeled with the following information:

- Sample identification;
- Initials of collector;
- Date and time of collection;
- Analytical parameters requested; and,
- Preservative used.

Samples were packed in coolers (with containerized ice) complete with custody seals and transported via overnight courier to the laboratory. Chain-of-custody documentation outlined as follows accompanied each shipment of samples to the laboratory.

A.4.4 Chain-of-Custody Procedures

Chain-of-custody began when the pre-cleaned sample containers arrived in the field in coolers with signed and dated custody seals. At the time of sample collection, the labeled samples were placed into an iced cooler. A line-item chain-of-custody form was then completed by the sampler. Chain-of-custody

allowed the samples to be traced from the time of collection to their receipt in the laboratory. Upon completion of all line items, the sampler signed, dated, listed the time, and checked the completeness of all descriptive information contained on the form. One copy of the completed chain-of-custody was retained by the sampler. Each individual who subsequently assumed responsibility for the samples signed the chain-of-custody record. The following items were included on the chain-of-custody form:

- Sample identification;
- Signature of sampler;
- Date and time of collection;
- Sample type (i.e., aqueous or soil);
- Sample location;
- Number, size, and type of containers;
- Analytical parameters requested;
- Preservative (where applicable);
- Signatures of personnel involved in the chain of possession; and,
- Dates and times of relinquishment and receipt.

A.5 Cleaning and Disposal of Investigation-Derived Wastes (IDW)

Cleaning procedures were employed to minimize the potential for cross-contamination, off-site migration of potential COCs, and personal exposure to COCs. The following sections summarize cleaning procedures and disposal of IDW.

A.5.1 Equipment Cleaning

Equipment involved in field sampling activities was cleaned prior to probehole advancement, sampling, or leaving the Subject Property. During soil sampling, cleaning of the sampling equipment was conducted between each sample interval and included the following:

- Removal of visible sediment using brush and non-phosphate soap and potable water mixture; and,
- Potable water rinse.

A.6 Record Keeping

BB&J field personnel documented the field activities (with corresponding times) and pertinent information in a dedicated project filed logbook. Information that was recorded included: the names and companies of on-site personnel (BB&J, client, subcontractors, etc), weather conditions, and the purpose of activities and details of the fieldwork (e.g., soil conditions, sampling depths, etc.).

APPENDIX B

LABORATORY ANALYTICAL REPORTS

MOBILE GEOCHEMISTRY

H&P

15 February 2007

Mr. Andy Bajorat
Bradburn, Briller & Johnson, LLC
162 North Franklin Street, 4th Floor
Chicago, IL 60606
RE: BBJ020507-11

Enclosed are the results of analyses for samples received by the laboratory on 05-Feb-07 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

J Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.

2470 Impala Drive, Carlsbad , California 92010 | 760.804.9678 — Fax 760.804.9159
3825 Industry Avenue, Lakewood , California 90712 | 562.426.6991 — Fax 562.426.6995
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MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-14	E702013-01	Vapor	01-Feb-07	05-Feb-07
SB-15	E702013-02	Vapor	01-Feb-07	05-Feb-07
SB-12	E702013-03	Vapor	01-Feb-07	05-Feb-07
SB-13	E702013-04	Vapor	01-Feb-07	05-Feb-07
SB-5	E702013-05	Vapor	01-Feb-07	05-Feb-07
SB-6	E702013-06	Vapor	01-Feb-07	05-Feb-07
SB-7	E702013-07	Vapor	01-Feb-07	05-Feb-07
SB-8	E702013-08	Vapor	01-Feb-07	05-Feb-07
SB-9	E702013-09	Vapor	01-Feb-07	05-Feb-07
SB-10	E702013-10	Vapor	01-Feb-07	05-Feb-07
SB-1	E702013-11	Vapor	02-Feb-07	05-Feb-07
SB-2	E702013-12	Vapor	02-Feb-07	05-Feb-07
SB-3	E702013-13	Vapor	02-Feb-07	05-Feb-07
SB-4	E702013-14	Vapor	02-Feb-07	05-Feb-07
SB-11	E702013-15	Vapor	02-Feb-07	05-Feb-07

Sample SB-7 was mislabeled as SB-8. The sample identity was determined by the time the sample was collected.

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-14 (E702013-01) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	59000	100	ppmv	10	EL62903	12-Feb-07	12-Feb-07	Modified EPA 8015B	
SB-15 (E702013-02) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	63000	200	ppmv	20	EL62903	12-Feb-07	12-Feb-07	Modified EPA 8015B	
SB-12 (E702013-03) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	23000	200	ppmv	20	EL62903	12-Feb-07	12-Feb-07	Modified EPA 8015B	
SB-13 (E702013-04) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	8500	10	ppmv	1	EL62903	12-Feb-07	12-Feb-07	Modified EPA 8015B	
SB-5 (E702013-05) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	680	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-6 (E702013-06) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	19000	20	ppmv	2	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-7 (E702013-07) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	18000	50	ppmv	5	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-8 (E702013-08) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	4200	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-9 (E702013-09) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	93000	200	ppmv	20	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-10 (E702013-10) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Methane	13000	20	ppmv	2	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-1 (E702013-11) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Methane	10000	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-2 (E702013-12) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Methane	380	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-3 (E702013-13) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Methane	5800	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-4 (E702013-14) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Methane	62000	100	ppmv	10	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	
SB-11 (E702013-15) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Methane	5300	10	ppmv	1	EB70605	06-Feb-07	06-Feb-07	Modified EPA 8015B	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-14 (E702013-01) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	20	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	300	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	14	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	28	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	12	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	5.1	5.0	"	"	"	"	"	"	
n-Hexane	360	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	30	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	100	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	180	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	170	5.0	"	"	"	"	"	"	
n-Heptane	120	5.0	"	"	"	"	"	"	
Trichloroethene	66	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-14 (E702013-01) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Toluene	62	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	12	5.0	"	"	"	"	"	"	
m,p-Xylene	9.0	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	7.0	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.1 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-15 (E702013-02) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	100	ug/m³ Air	10	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	100	"	"	"	"	"	"	
Chloromethane	ND	50	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	150000	120	"	25	"	"	14-Feb-07	"	E
Bromomethane	ND	50	"	10	"	"	12-Feb-07	"	
Chloroethane	ND	50	"	"	"	"	"	"	
Bromoethene	ND	50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	50	"	"	"	"	"	"	
Acetone	550	200	"	"	"	"	"	"	
1,1-Dichloroethene	770	50	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	100	"	"	"	"	"	"	
Allyl chloride	ND	50	"	"	"	"	"	"	
Methylene chloride	ND	50	"	"	"	"	"	"	
Carbon disulfide	630	50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	6900	50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	50	"	"	"	"	"	"	
Vinyl acetate	ND	50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	50	"	"	"	"	"	"	
2-Butanone	ND	50	"	"	"	"	"	"	
n-Hexane	9000	120	"	25	"	"	14-Feb-07	"	
cis-1,2-Dichloroethene	22000	120	"	"	"	"	"	"	
Ethyl acetate	ND	50	"	10	"	"	12-Feb-07	"	
Chloroform	ND	50	"	"	"	"	"	"	
Tetrahydrofuran	ND	50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	50	"	"	"	"	"	"	
1,2-Dichloroethane	100	50	"	"	"	"	"	"	
Benzene	ND	50	"	"	"	"	"	"	
Carbon tetrachloride	480	50	"	"	"	"	"	"	
Cyclohexane	11000	120	"	25	"	"	14-Feb-07	"	
2,2,4-Trimethylpentane	ND	50	"	10	"	"	12-Feb-07	"	
n-Heptane	6800	50	"	"	"	"	"	"	
Trichloroethene	2400	50	"	"	"	"	"	"	
1,2-Dichloropropane	ND	50	"	"	"	"	"	"	
1,4-Dioxane	ND	50	"	"	"	"	"	"	
Bromodichloromethane	ND	55	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	50	"	"	"	"	"	"	
4-Methyl-2-pentanone	87	50	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-15 (E702013-02) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	50	ug/m³ Air	10	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Toluene	28000	120	"	25	"	"	14-Feb-07	"	
1,1,2-Trichloroethane	ND	50	"	10	"	"	12-Feb-07	"	
2-Hexanone	ND	50	"	"	"	"	"	"	
Dibromochloromethane	ND	50	"	"	"	"	"	"	
Tetrachloroethene	84	50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	50	"	"	"	"	"	"	
Chlorobenzene	ND	50	"	"	"	"	"	"	
Ethylbenzene	4000	50	"	"	"	"	"	"	
m,p-Xylene	2700	50	"	"	"	"	"	"	
Styrene	100	50	"	"	"	"	"	"	
o-Xylene	3000	50	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	50	"	"	"	"	"	"	
4-Ethyltoluene	57	50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	200	50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	150	50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Benzyl chloride	ND	50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*106 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-12 (E702013-03) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	9.9	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	300	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	80	20	"	"	"	"	"	"	
1,1-Dichloroethene	5.1	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	15	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	88	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	28	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	26	5.0	"	"	"	"	"	"	
n-Hexane	280	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	110	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	120	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	88	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	250	5.0	"	"	"	"	"	"	
Trichloroethene	83	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-12 (E702013-03) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Toluene	110	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	30	5.0	"	"	"	"	"	"	
m,p-Xylene	26	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	33	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	6.3	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	8.4	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.8 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-13 (E702013-04) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	8.7	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	47	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	280	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	26	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	200	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	87	5.0	"	"	"	"	"	"	
n-Hexane	65	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	19	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	260	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	37	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	39	5.0	"	"	"	"	"	"	
Trichloroethene	30	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	5.3	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-13 (E702013-04) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB71305	12-Feb-07	12-Feb-07	EPA TO-15	
Toluene	300	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	560	5.0	"	"	"	"	"	"	
m,p-Xylene	290	5.0	"	"	"	"	"	"	
Styrene	17	5.0	"	"	"	"	"	"	
o-Xylene	320	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	25	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	61	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	57	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.5 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-5 (E702013-05) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	18	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	5.7	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	24	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	10	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	230	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	14	5.0	"	"	"	"	"	"	
n-Hexane	2300	5.0	"	"	"	"	"	"	E
cis-1,2-Dichloroethene	5.6	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	92	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	590	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	2000	5.0	"	"	"	"	"	"	E
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-5 (E702013-05) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Toluene	67	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	24	5.0	"	"	"	"	"	"	
m,p-Xylene	18	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	20	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	5.9	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	8.9	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-6 (E702013-06) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	6.3	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	41	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	12	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	99	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	15	5.0	"	"	"	"	"	"	
n-Hexane	69	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	32	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	91	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	29	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-6 (E702013-06) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Toluene	35	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	9.8	5.0	"	"	"	"	"	"	
m,p-Xylene	8.3	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	7.8	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-7 (E702013-07) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	39	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	26	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	18	5.0	"	"	"	"	"	"	
n-Hexane	97	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	13	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	84	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	47	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	66	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-7 (E702013-07) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70704	06-Feb-07	06-Feb-07	EPA TO-15	
Toluene	84	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	20	5.0	"	"	"	"	"	"	
m,p-Xylene	15	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	14	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	5.2	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-8 (E702013-08) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	16	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	10	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	7.5	5.0	"	"	"	"	"	"	
n-Hexane	62	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	28	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	24	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	30	5.0	"	"	"	"	"	"	
n-Heptane	25	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-8 (E702013-08) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	20	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	6.8	5.0	"	"	"	"	"	"	
m,p-Xylene	7.3	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	6.2	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.8 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-9 (E702013-09) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	710	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	15	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	11	5.0	"	"	"	"	"	"	
n-Hexane	470	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	37	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	390	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	490	5.0	"	"	"	"	"	"	
n-Heptane	35	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	35	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-9 (E702013-09) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	23	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	9.2	5.0	"	"	"	"	"	"	
m,p-Xylene	11	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	12	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-10 (E702013-10) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	38	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	22	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	200	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	210	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	37	5.0	"	"	"	"	"	"	
n-Hexane	210	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	7.9	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	160	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	80	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	83	5.0	"	"	"	"	"	"	
n-Heptane	190	5.0	"	"	"	"	"	"	
Trichloroethene	15	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-10 (E702013-10) Vapor Sampled: 01-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	120	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	6.2	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	42	5.0	"	"	"	"	"	"	
m,p-Xylene	31	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	30	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	5.2	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	6.8	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.9 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-1 (E702013-11) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	8.1	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	21	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	33	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	14	5.0	"	"	"	"	"	"	
n-Hexane	240	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	11	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	11	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	110	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	160	5.0	"	"	"	"	"	"	
Trichloroethene	12	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-1 (E702013-11) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	20	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	11	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	7.1	5.0	"	"	"	"	"	"	
m,p-Xylene	6.5	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	6.6	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.4 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.1 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.7 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-2 (E702013-12) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	62	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	11	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	7.6	5.0	"	"	"	"	"	"	
n-Hexane	7.3	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	ND	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	6.7	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-2 (E702013-12) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	6.8	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.8 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-3 (E702013-13) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	12	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	310	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	75	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	75	5.0	"	"	"	"	"	"	
n-Hexane	56	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	34	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	38	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	33	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-3 (E702013-13) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	40	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	10	5.0	"	"	"	"	"	"	
m,p-Xylene	7.6	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	6.8	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-4 (E702013-14) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	100	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	28	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	37	5.0	"	"	"	"	"	"	
n-Hexane	57	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	27	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	44	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	42	5.0	"	"	"	"	"	"	
n-Heptane	28	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-4 (E702013-14) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	36	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	11	5.0	"	"	"	"	"	"	
m,p-Xylene	7.8	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
o-Xylene	8.0	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*99.1 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-11 (E702013-15) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
Propene	ND	10	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Dichlorodifluoromethane	ND	10	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	10	"	"	"	"	"	"	
Vinyl chloride	3600	50	"	10	"	"	08-Feb-07	"	
Bromomethane	ND	5.0	"	1	"	"	07-Feb-07	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Bromoethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Acetone	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	8.0	5.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	24	10	"	"	"	"	"	"	
Allyl chloride	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Carbon disulfide	74	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	110	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
2-Butanone	11	5.0	"	"	"	"	"	"	
n-Hexane	1800	50	"	10	"	"	08-Feb-07	"	
cis-1,2-Dichloroethene	340	5.0	"	1	"	"	07-Feb-07	"	
Ethyl acetate	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Benzene	130	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Cyclohexane	380	5.0	"	"	"	"	"	"	
2,2,4-Trimethylpentane	ND	5.0	"	"	"	"	"	"	
n-Heptane	1400	50	"	10	"	"	08-Feb-07	"	
Trichloroethene	100	5.0	"	1	"	"	07-Feb-07	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dioxane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.0	"	"	"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SB-11 (E702013-15) Vapor Sampled: 02-Feb-07 Received: 05-Feb-07									
trans-1,3-Dichloropropene	ND	5.0	ug/m³ Air	1	EB70706	07-Feb-07	07-Feb-07	EPA TO-15	
Toluene	54	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
2-Hexanone	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	14	5.0	"	"	"	"	"	"	
m,p-Xylene	7.7	5.0	"	"	"	"	"	"	
Styrene	8.2	5.0	"	"	"	"	"	"	
o-Xylene	8.2	5.0	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Benzyl chloride	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.4 %*	*80-120*		"	"	"	"	

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70605 - GC										
Blank (EB70605-BLK1)				Prepared & Analyzed: 06-Feb-07						
Methane	ND	10	ppmv							
Batch EL62903 - GC										
Blank (EL62903-BLK1)				Prepared & Analyzed: 12-Jan-08						
Methane	ND	10	ppmv							

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70704 - TO-15										
Blank (EB70704-BLK1)				Prepared & Analyzed: 06-Feb-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Bromoethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Allyl chloride	ND	5.0	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
2,2,4-Trimethylpentane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70704 - TO-15										
Blank (EB70704-BLK1)				Prepared & Analyzed: 06-Feb-07						
1,4-Dioxane	ND	5.0	ug/m³ Air							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							
4-Methyl-2-pentanone	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*103*		*"*	*103*		*100*	*80-120*			
Surrogate: Toluene-d8	*95.1*		*"*	*96.2*		*98.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*174*		*"*	*182*		*95.6*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70704 - TO-15										
LCS (EB70704-BS1)				Prepared & Analyzed: 06-Feb-07						
Propene	34.7	10	ug/m³ Air	35.0		99.1	65-135			
Dichlorodifluoromethane	89.1	10	"	101		88.2	65-135			
Chloromethane	32.9	5.0	"	42.0		78.3	65-135			
Dichlorotetrafluoroethane	122	10	"	142		85.9	65-135			
Vinyl chloride	43.5	5.0	"	52.0		83.7	65-135			
Bromomethane	92.8	5.0	"	79.2		117	65-135			
Chloroethane	63.7	5.0	"	53.6		119	65-135			
Bromoethene	95.7	5.0	"	89.2		107	65-135			
Trichlorofluoromethane	113	5.0	"	113		100	65-135			
Acetone	58.5	20	"	48.4		121	65-135			
1,1-Dichloroethene	82.8	5.0	"	80.8		102	65-135			
1,1,2-Trichlorotrifluoroethane	157	10	"	155		101	65-135			
Allyl chloride	66.6	5.0	"	64.0		104	65-135			
Methylene chloride	74.4	5.0	"	70.8		105	65-135			
Carbon disulfide	64.3	5.0	"	63.2		102	65-135			
trans-1,2-Dichloroethene	84.1	5.0	"	80.8		104	65-135			
Methyl tert-butyl ether	81.1	5.0	"	73.6		110	65-135			
Vinyl acetate	71.6	5.0	"	72.0		99.4	65-135			
1,1-Dichloroethane	86.2	5.0	"	82.4		105	65-135			
2-Butanone	66.5	5.0	"	60.0		111	65-135			
n-Hexane	75.4	5.0	"	72.0		105	65-135			
cis-1,2-Dichloroethene	85.2	5.0	"	80.0		106	65-135			
Ethyl acetate	74.5	5.0	"	73.6		101	65-135			
Chloroform	101	5.0	"	99.2		102	65-135			
Tetrahydrofuran	65.1	5.0	"	60.0		108	65-135			
1,1,1-Trichloroethane	112	5.0	"	111		101	65-135			
1,2-Dichloroethane	84.5	5.0	"	82.4		103	65-135			
Benzene	70.2	5.0	"	64.8		108	65-135			
Carbon tetrachloride	126	5.0	"	128		98.4	65-135			
Cyclohexane	71.9	5.0	"	70.4		102	65-135			
2,2,4-Trimethylpentane	99.0	5.0	"	95.2		104	65-135			
n-Heptane	87.9	5.0	"	83.6		105	65-135			
Trichloroethene	114	5.0	"	110		104	65-135			
1,2-Dichloropropane	98.5	5.0	"	94.4		104	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70704 - TO-15										
LCS (EB70704-BS1)				Prepared & Analyzed: 06-Feb-07						
1,4-Dioxane	78.5	5.0	ug/m³ Air	73.6		107	65-135			
Bromodichloromethane	134	5.5	"	137		97.8	65-135			
cis-1,3-Dichloropropene	91.0	5.0	"	92.4		98.5	65-135			
4-Methyl-2-pentanone	81.8	5.0	"	83.2		98.3	65-135			
trans-1,3-Dichloropropene	73.5	5.0	"	92.4		79.5	65-135			
Toluene	80.2	5.0	"	76.8		104	65-135			
1,1,2-Trichloroethane	114	5.0	"	111		103	65-135			
2-Hexanone	82.9	5.0	"	83.2		99.6	65-135			
Dibromochloromethane	165	5.0	"	174		94.8	65-135			
Tetrachloroethene	148	5.0	"	138		107	65-135			
1,2-Dibromoethane (EDB)	159	5.0	"	157		101	65-135			
Chlorobenzene	99.0	5.0	"	93.6		106	65-135			
Ethylbenzene	95.4	5.0	"	88.4		108	65-135			
m,p-Xylene	92.4	5.0	"	88.4		105	65-135			
Styrene	80.5	5.0	"	86.8		92.7	65-135			
o-Xylene	93.3	5.0	"	88.4		106	65-135			
Bromoform	878	20	"	840		105	65-135			
1,1,2,2-Tetrachloroethane	143	5.0	"	140		102	65-135			
4-Ethyltoluene	103	5.0	"	100		103	65-135			
1,3,5-Trimethylbenzene	94.7	5.0	"	100		94.7	65-135			
1,2,4-Trimethylbenzene	98.0	5.0	"	100		98.0	65-135			
1,3-Dichlorobenzene	122	10	"	122		100	65-135			
Benzyl chloride	94.2	5.0	"	105		89.7	65-135			
1,4-Dichlorobenzene	125	10	"	122		102	65-135			
1,2-Dichlorobenzene	124	10	"	122		102	65-135			
1,2,4-Trichlorobenzene	145	10	"	151		96.0	65-135			
Hexachlorobutadiene	152	10	"	218		69.7	65-135			
Surrogate: 1,2-Dichloroethane-d4	*102*		*"*	*103*		*99.0*	*80-120*			
Surrogate: Toluene-d8	*94.8*		*"*	*96.2*		*98.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*185*		*"*	*182*		*102*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70706 - TO-15										
Blank (EB70706-BLK1)				Prepared & Analyzed: 07-Feb-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Bromoethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Allyl chloride	ND	5.0	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
2,2,4-Trimethylpentane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70706 - TO-15										
Blank (EB70706-BLK1)				Prepared & Analyzed: 07-Feb-07						
1,4-Dioxane	ND	5.0	ug/m³ Air							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							
4-Methyl-2-pentanone	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*104*		*"*	*103*		*101*	*80-120*			
Surrogate: Toluene-d8	*95.1*		*"*	*96.2*		*98.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*174*		*"*	*182*		*95.6*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70706 - TO-15										
LCS (EB70706-BS1)				Prepared & Analyzed: 07-Feb-07						
Propene	35.4	10	ug/m³ Air	35.0		101	65-135			
Dichlorodifluoromethane	90.6	10	"	101		89.7	65-135			
Chloromethane	42.2	5.0	"	42.0		100	65-135			
Dichlorotetrafluoroethane	140	10	"	142		98.6	65-135			
Vinyl chloride	50.4	5.0	"	52.0		96.9	65-135			
Bromomethane	75.4	5.0	"	79.2		95.2	65-135			
Chloroethane	48.3	5.0	"	53.6		90.1	65-135			
Bromoethene	80.2	5.0	"	89.2		89.9	65-135			
Trichlorofluoromethane	105	5.0	"	113		92.9	65-135			
Acetone	47.5	20	"	48.4		98.1	65-135			
1,1-Dichloroethene	83.3	5.0	"	80.8		103	65-135			
1,1,2-Trichlorotrifluoroethane	160	10	"	155		103	65-135			
Allyl chloride	64.9	5.0	"	64.0		101	65-135			
Methylene chloride	74.9	5.0	"	70.8		106	65-135			
Carbon disulfide	65.1	5.0	"	63.2		103	65-135			
trans-1,2-Dichloroethene	84.2	5.0	"	80.8		104	65-135			
Methyl tert-butyl ether	80.0	5.0	"	73.6		109	65-135			
Vinyl acetate	89.2	5.0	"	72.0		124	65-135			
1,1-Dichloroethane	86.6	5.0	"	82.4		105	65-135			
2-Butanone	68.2	5.0	"	60.0		114	65-135			
n-Hexane	76.4	5.0	"	72.0		106	65-135			
cis-1,2-Dichloroethene	84.7	5.0	"	80.0		106	65-135			
Ethyl acetate	76.2	5.0	"	73.6		104	65-135			
Chloroform	102	5.0	"	99.2		103	65-135			
Tetrahydrofuran	63.7	5.0	"	60.0		106	65-135			
1,1,1-Trichloroethane	114	5.0	"	111		103	65-135			
1,2-Dichloroethane	86.6	5.0	"	82.4		105	65-135			
Benzene	69.5	5.0	"	64.8		107	65-135			
Carbon tetrachloride	131	5.0	"	128		102	65-135			
Cyclohexane	72.1	5.0	"	70.4		102	65-135			
2,2,4-Trimethylpentane	100	5.0	"	95.2		105	65-135			
n-Heptane	87.1	5.0	"	83.6		104	65-135			
Trichloroethene	113	5.0	"	110		103	65-135			
1,2-Dichloropropane	96.6	5.0	"	94.4		102	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB70706 - TO-15										
LCS (EB70706-BS1)				Prepared & Analyzed: 07-Feb-07						
1,4-Dioxane	76.9	5.0	ug/m³ Air	73.6		104	65-135			
Bromodichloromethane	134	5.5	"	137		97.8	65-135			
cis-1,3-Dichloropropene	89.4	5.0	"	92.4		96.8	65-135			
4-Methyl-2-pentanone	81.3	5.0	"	83.2		97.7	65-135			
trans-1,3-Dichloropropene	72.2	5.0	"	92.4		78.1	65-135			
Toluene	79.3	5.0	"	76.8		103	65-135			
1,1,2-Trichloroethane	112	5.0	"	111		101	65-135			
2-Hexanone	83.5	5.0	"	83.2		100	65-135			
Dibromochloromethane	169	5.0	"	174		97.1	65-135			
Tetrachloroethene	144	5.0	"	138		104	65-135			
1,2-Dibromoethane (EDB)	156	5.0	"	157		99.4	65-135			
Chlorobenzene	102	5.0	"	93.6		109	65-135			
Ethylbenzene	95.8	5.0	"	88.4		108	65-135			
m,p-Xylene	93.2	5.0	"	88.4		105	65-135			
Styrene	78.9	5.0	"	86.8		90.9	65-135			
o-Xylene	94.0	5.0	"	88.4		106	65-135			
Bromoform	903	20	"	840		108	65-135			
1,1,2,2-Tetrachloroethane	145	5.0	"	140		104	65-135			
4-Ethyltoluene	105	5.0	"	100		105	65-135			
1,3,5-Trimethylbenzene	93.3	5.0	"	100		93.3	65-135			
1,2,4-Trimethylbenzene	99.5	5.0	"	100		99.5	65-135			
1,3-Dichlorobenzene	123	10	"	122		101	65-135			
Benzyl chloride	96.5	5.0	"	105		91.9	65-135			
1,4-Dichlorobenzene	127	10	"	122		104	65-135			
1,2-Dichlorobenzene	122	10	"	122		100	65-135			
1,2,4-Trichlorobenzene	147	10	"	151		97.4	65-135			
Hexachlorobutadiene	233	10	"	218		107	65-135			
Surrogate: 1,2-Dichloroethane-d4	*103*		*"*	*103*		*100*	*80-120*			
Surrogate: Toluene-d8	*93.1*		*"*	*96.2*		*96.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*181*		*"*	*182*		*99.5*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71305 - TO-15										
Blank (EB71305-BLK1)				Prepared & Analyzed: 12-Feb-07						
Propene	ND	10	ug/m³ Air							
Dichlorodifluoromethane	ND	10	"							
Chloromethane	ND	5.0	"							
Dichlorotetrafluoroethane	ND	10	"							
Vinyl chloride	ND	5.0	"							
Bromomethane	ND	5.0	"							
Chloroethane	ND	5.0	"							
Bromoethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Acetone	ND	20	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	10	"							
Allyl chloride	ND	5.0	"							
Methylene chloride	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
Vinyl acetate	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
2-Butanone	ND	5.0	"							
n-Hexane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Ethyl acetate	ND	5.0	"							
Chloroform	ND	5.0	"							
Tetrahydrofuran	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Cyclohexane	ND	5.0	"							
2,2,4-Trimethylpentane	ND	5.0	"							
n-Heptane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71305 - TO-15										
Blank (EB71305-BLK1)				Prepared & Analyzed: 12-Feb-07						
1,4-Dioxane	ND	5.0	ug/m³ Air							
Bromodichloromethane	ND	5.5	"							
cis-1,3-Dichloropropene	ND	5.0	"							
4-Methyl-2-pentanone	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
2-Hexanone	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
Styrene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Bromoform	ND	20	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	10	"							
Benzyl chloride	ND	5.0	"							
1,4-Dichlorobenzene	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Hexachlorobutadiene	ND	10	"							
Surrogate: 1,2-Dichloroethane-d4	*97.8*		*"*	*103*		*95.0*	*80-120*			
Surrogate: Toluene-d8	*93.4*		*"*	*96.2*		*97.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*158*		*"*	*182*		*86.8*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71305 - TO-15										
LCS (EB71305-BS1)				Prepared & Analyzed: 12-Feb-07						
Propene	32.5	10	ug/m³ Air	35.0		92.9	65-135			
Dichlorodifluoromethane	107	10	"	101		106	65-135			
Chloromethane	44.5	5.0	"	42.0		106	65-135			
Dichlorotetrafluoroethane	157	10	"	142		111	65-135			
Vinyl chloride	52.4	5.0	"	52.0		101	65-135			
Bromomethane	94.8	5.0	"	79.2		120	65-135			
Chloroethane	62.4	5.0	"	53.6		116	65-135			
Bromoethene	95.1	5.0	"	89.2		107	65-135			
Trichlorofluoromethane	115	5.0	"	113		102	65-135			
Acetone	59.4	20	"	48.4		123	65-135			
1,1-Dichloroethene	78.7	5.0	"	80.8		97.4	65-135			
1,1,2-Trichlorotrifluoroethane	165	10	"	155		106	65-135			
Allyl chloride	64.2	5.0	"	64.0		100	65-135			
Methylene chloride	74.0	5.0	"	70.8		105	65-135			
Carbon disulfide	65.5	5.0	"	63.2		104	65-135			
trans-1,2-Dichloroethene	78.0	5.0	"	80.8		96.5	65-135			
Methyl tert-butyl ether	70.2	5.0	"	73.6		95.4	65-135			
Vinyl acetate	63.8	5.0	"	72.0		88.6	65-135			
1,1-Dichloroethane	83.6	5.0	"	82.4		101	65-135			
2-Butanone	58.6	5.0	"	60.0		97.7	65-135			
n-Hexane	72.7	5.0	"	72.0		101	65-135			
cis-1,2-Dichloroethene	81.0	5.0	"	80.0		101	65-135			
Ethyl acetate	69.2	5.0	"	73.6		94.0	65-135			
Chloroform	103	5.0	"	99.2		104	65-135			
Tetrahydrofuran	58.2	5.0	"	60.0		97.0	65-135			
1,1,1-Trichloroethane	111	5.0	"	111		100	65-135			
1,2-Dichloroethane	83.2	5.0	"	82.4		101	65-135			
Benzene	66.1	5.0	"	64.8		102	65-135			
Carbon tetrachloride	133	5.0	"	128		104	65-135			
Cyclohexane	69.6	5.0	"	70.4		98.9	65-135			
2,2,4-Trimethylpentane	117	5.0	"	95.2		123	65-135			
n-Heptane	91.6	5.0	"	83.6		110	65-135			
Trichloroethene	122	5.0	"	110		111	65-135			
1,2-Dichloropropane	98.9	5.0	"	94.4		105	65-135			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71305 - TO-15										
LCS (EB71305-BS1)				Prepared & Analyzed: 12-Feb-07						
1,4-Dioxane	73.5	5.0	ug/m³ Air	73.6		99.9	65-135			
Bromodichloromethane	147	5.5	"	137		107	65-135			
cis-1,3-Dichloropropene	90.4	5.0	"	92.4		97.8	65-135			
4-Methyl-2-pentanone	78.3	5.0	"	83.2		94.1	65-135			
trans-1,3-Dichloropropene	74.3	5.0	"	92.4		80.4	65-135			
Toluene	83.8	5.0	"	76.8		109	65-135			
1,1,2-Trichloroethane	122	5.0	"	111		110	65-135			
2-Hexanone	73.9	5.0	"	83.2		88.8	65-135			
Dibromochloromethane	188	5.0	"	174		108	65-135			
Tetrachloroethene	148	5.0	"	138		107	65-135			
1,2-Dibromoethane (EDB)	169	5.0	"	157		108	65-135			
Chlorobenzene	102	5.0	"	93.6		109	65-135			
Ethylbenzene	94.5	5.0	"	88.4		107	65-135			
m,p-Xylene	93.4	5.0	"	88.4		106	65-135			
Styrene	78.3	5.0	"	86.8		90.2	65-135			
o-Xylene	93.9	5.0	"	88.4		106	65-135			
Bromoform	986	20	"	840		117	65-135			
1,1,2,2-Tetrachloroethane	152	5.0	"	140		109	65-135			
4-Ethyltoluene	102	5.0	"	100		102	65-135			
1,3,5-Trimethylbenzene	93.4	5.0	"	100		93.4	65-135			
1,2,4-Trimethylbenzene	97.2	5.0	"	100		97.2	65-135			
1,3-Dichlorobenzene	126	10	"	122		103	65-135			
Benzyl chloride	82.0	5.0	"	105		78.1	65-135			
1,4-Dichlorobenzene	130	10	"	122		107	65-135			
1,2-Dichlorobenzene	127	10	"	122		104	65-135			
1,2,4-Trichlorobenzene	127	10	"	151		84.1	65-135			
Hexachlorobutadiene	174	10	"	218		79.8	65-135			
Surrogate: 1,2-Dichloroethane-d4	*98.5*		*"*	*103*		*95.6*	*80-120*			
Surrogate: Toluene-d8	*94.7*		*"*	*96.2*		*98.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*176*		*"*	*182*		*96.7*	*80-120*			

MOBILE GEOCHEMISTRY H&P

Bradburn, Briller & Johnson, LLC 162 North Franklin Street, 4th Floor Chicago, IL 60606	Project: BBJ020507-11 Project Number: Lyons, Illinois Project Manager: Mr. Andy Bajorat	Reported: 15-Feb-07

Notes and Definitions

E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 2/2/07
H&P Project # BBJ020507-11
Outside Lab:

Client: BB+J
Address: 162 N. Franklin Fourth Floor
Chicago, IL 60606
Email: abayorat@bbjgroup.com Phone: 312-726-8556

Collector: Kevin McCartney + Michele Hargreaves Page: 1 of 2
Client Project #
Project Contact: Andy Bayorat
Location: Lyons, IL
Fax: 312-726-8514
Turn around time:

EDF: Yes ☐ No ☐
Global ID:

Sample Receipt
Intact: ☒ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☒ N/A
Cold: ☐ Yes ☒ No
N/A (Received on Site)

Special Instructions:
- Do NOT test for 1,3-Butadiene for any/all samples
- SB-12 through SB-15, Please hold until further notice

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH ☐ gasoline ☐ diesel ☐ ext	418.1 TRPH	8021 for BTEX/MTBE	8260B: BTEX / Oxygenates	8260B: TPH gas	8260B: VOC's	8260B: DTSC/LARWQCB	8260B: Ketones	TO-15: Full List	TO-15: BTEX/MTBE	LCC (specify)	Naphthalene ☐ 8260B ☐ TO-15	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	Methane			Total # of containers
SB-14			8:55	2/1	SG	400mL									X						X			
SB-15			9:25	2/1	SG	400mL									X						X			
SB-12			10:30	2/1	SG	400mL									X						X			
SB-13			10:45	2/1	SG	400mL									X						X			
SB-5			3:30	2/1	SG	400mL									X						X			
SB-6			4:00	2/1	SG	400mL									X						X			
SB-7	mislabelled as SB-8 MC 2/5/07		4:15	2/1	SG	400mL									X						X			
SB-8			4:35	2/1	SG	400mL									X						X			
SB-9			4:50	2/1	SG	400mL									X						X			
SB-10			5:20	2/1	SG	400mL									X						X			

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele L Hargreaves (2/2/07)	BB+J	[signature] via FedEx	HHP	2/5/07	9:00

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY

H&P

Chain of Custody Record

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☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 2/2/07
H&P Project # BBJ020507-11
Outside Lab:

Client: BB+J
Address: 162 N Franklin, Fourth Floor
Chicago, IL 60606
Email: abayrat@bbjgroup.com Phone: 312-726-8556

Collector: Kevin McCartney + Michele Hargreaves Page: 2 of 2
Client Project #
Project Contact: Andy Bayrat
Location: Lyons, Illinois
Fax: 312-726-8514
Turn around time:

EDF: Yes ☐ No ☐
Global ID:

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SB-1			12:00	2/2	SG	400mL									X						X			
SB-2			12:15	2/2	SG	400mL									X						X			
SB-3			12:30	2/2	SG	400mL									X						X			
SB-4			12:50	2/2	SG	400mL									X						X			
SB-11			1:10	2/2	SG	400mL									X						X			

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Michele Hargreaves (2/2/07)	BB+J	Ann K via FedEx	H&P	2/5/07	9:00
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

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Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*