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July 2, 2015
(2066)

RE: Response to USEPA Comments on
Site-Specific Work Plan, Revision 0
Crawford Station MGP Site – Group III, Chicago, Illinois
The Peoples Gas Light and Coke Company

CERCLA Docket No. V-W-08-C-917
CERCLIS ID – ILN000510192

Dear Mr. del Rosario:

On behalf of WEC Energy Group, Natural Resource Technology, Inc. (NRT) is providing the enclosed Site-Specific Work Plan (SSWP), Revision 1 and responses to the United States Environmental Protection Agency (USEPA) comments on the Crawford Station Former Manufactured Gas Plant (MGP) Site SSWP, Revision 0, dated August 14, 2014. For ease of review, USEPA comments are presented below in italics, followed by the responses.

Applicable USEPA comments on SSWP, Revision 0 have been incorporated in the enclosed Crawford Station MGP Site SSWP, Revision 1, text, figures and tables.

USEPA General Comments

1. *Looking forward to later remedial investigation (RI) phases and the feasibility study (FS), it would be prudent to consider adding the following elements to the sampling approach in terms of documenting whether monitored natural attenuation (MNA) is occurring at the site. These elements may be added after the initial rounds of sitewide groundwater data are reviewed and evaluated. More than one line of evidence must be presented to demonstrate MNA. Examples would include:*
   - Geochemical data showing plume size reduction over time
   - Hydrogeological or geochemical data showing rates of attenuation
   - Microcosm studies directly showing the presence [of] certain microorganisms associated with a particular natural attenuation process

Response: These parameters will be evaluated following completion of time-critical removal action activities currently on-going at Parcels L and O and planned for Parcels D, I, and M in the near future. Groundwater parameters are anticipated to fluctuate during time-critical removal actions, due to excavation work and associated dewatering activities. Therefore, conducting such investigation elements at this time may not provide reliable data to support whether natural attenuation processes have occurred or are still occurring.

2. *At the time of this SSWP, leaking underground storage tank (LUST) and site remediation program (SRP) documentation was not received from a Freedom of Information Act (FOIA) request. As with previous comments on a prior Crawford Parcel SSWP, it has been recommended that the FOIA files be obtained and reviewed before submitting the SSWP addendum, so relevant information can be factored into investigative plans.*

Response: In order to further assess the interrelationship between USTs and LUST sites in the vicinity of the Crawford MGP, FOIA requests have been made for pertinent data relating to the Crawford Station Site and the

surrounding area. As discussed during the July 23, 2013 meeting, information regarding UST, LUST, and SRP sites that are within the MGP boundaries are priority and will be evaluated first. Off-site UST/LUST sites will be considered for evaluation once the baseline groundwater monitoring program progresses to the point where groundwater flow direction can be confirmed. This approach is proposed to avoid reviewing extensive file information for UST/LUST sites that may be determined to be down-gradient of the MGP or are otherwise unlikely to provide useful information.

At this time of this addendum, UST/LUST data is available for Parcel N, but not for Parcel J. A request was made in 2014, but the request response indicated that there were no available files for Parcel J. There have been changes to the IEPA's website since the FOIA requests and an update to the Bureau of Land database. Additional files (and more recent files) were found regarding Parcel J based an approximate address range. NRT has recently requested the data, but has not received copies of the FOIA request along with several other potentially new addresses found in the database. Once received, the FOIA information for Group III parcels will be reviewed and relevant information will be detailed in the RI Report. Because the FOIA data anticipated is relevant to USTs installed after the MGP operations ceased, the UST data will be relevant to identify any contaminated media unrelated to the MGP in the RI Report.

3. *There are substantial editorial comments for this SSWP. Editorial comments are included at the end of this comment letter.*

Response: Comment is noted and editorial comments are reflected in the updated SSWP as necessary.

USEPA Specific Comments

1. *Section 2.2.1, Page 5, Paragraph 3. A bulleted list is provided detailing the MGP structures for the entire Crawford Station Site. It would be beneficial to list those that are present on Group 3, since those portrayed in Figure 3 are difficult to see, and this SSWP is specific to the Group 3 parcels.*

Response: A bulleted list is provided in the revised SSWP in Section 2.2.1 that provides MGP features present in Group III parcels, as well as the feature's specific locations within each parcel.

2. *Section 3.2 and Table 2. Consider sampling and analyzing groundwater for dissolved metals on a semi-annual basis. This data would assist in evaluating soluble and non-soluble metal concentrations and provide more data for the feasibility study and risk assessment in order to further evaluate if metals detections are the potential result of turbidity or are more reflective of dissolved conditions that would be more prone to be a migration concern. For instance, Group I groundwater data that was recently submitted contains detections of lead and arsenic that might be further evaluated by conducting dissolved analysis.*

Response: Dissolved metals will be analyzed during sampling events to provide more data for the feasibility study and risk assessment. The SSWP text and tables have been updated to include dissolved metals in the sampling plan.

3. *Section 3.2, Page 13, Paragraph 1, Last Sentence, Table 1, and Appendix C. Although prior analytical data is helpful in guiding future investigative efforts, it is important to note that there may be unique former uses/features of Group 3 parcels (e.g., transformers, paint shops, maintenance shops, and coal storage) that would result in detection of some chemicals not formerly detected on other parcels or more frequent detections on the Group 3 parcels. Most of the areas on the Group III parcels have not been sampled yet. For example, this SSWP does not propose PCB analysis for Group III parcels, while Figure 3 and 6B show a former MGP "main transformer station" in the southern portion of Parcel T that is expected to warrant PCB sampling. Please add PCB analysis to the three proposed borings surrounding this former*

transformer area at a minimum. In addition, given that the prior sampling on the Crawford site largely appears to be outside of the coal storage areas, it is recommended that soil sample locations within the coal storage areas in Group III include analysis for the standard list of potential MGP-related metals, as was done on other sites such as Throop Street and 22nd Street SSWPs.

Response: PCBs will be analyzed in two soil samples near the former transformers (TSB-111) in Parcel T and the former electrical substation (MSB-103) in Parcel M. The remaining sampling locations will not include an analysis for PCBs as they are not in the vicinity of equipment that may have contained PCBs.

NRT has evaluated the former MGP map (Figure 3) to identify any machine shops, paint shops, etc. on the Group III parcels to identify if additional COPCs beyond the RAF 2007 standard list is required to fully characterize the former MGP operations. Other than the former electrical substation and transformers, a machine shop was immediately adjacent to, and possibly straddled, the parcel boundary between Parcel B and Parcel I. No other similar operations were identified. Further discussions are provided in the response to Comment 5.

4. *Section 3.2, Table 1 and Appendix C. In addition to the prior comment, the SSWP selectively expands or reduces analytical parameter lists on a media by media basis. Upon further review of the COPC evaluation included in this SSWP (inclusive of Appendix C) it is apparent that the proposed approach does not account for the multi lines of evidence concept that may require an assessment of data from each media for a single COPC. Examples of the potential limitations of expanding or reducing analytical parameter lists on a media by media basis are described in the next 2 comment bullets. Therefore, it is recommended that the Site Specific COPC Screen process for all MGP sites, (including Appendix C of this SSWP) consider the interrelationship between media, and as a general rule, COPCs should be made consistent between soil, groundwater, and VI media analyses, as described below unless supported by specific logic and documentation in the SSWP. Please incorporate this concept into the SSWP approach and revise the SSWP accordingly.*

Response: The list of COPCs has been revised to standard COPC list from the 2007 RAF and a few site–specific COPCs. The revised COPC list (Table 1) is consistent between media. As stated, a multiple lines of evidence of approach will be used for Group III to determine whether specific constituents can be removed from COPC lists over a period of time. The text and tables of the SSWP have been modified to include the entire set of COPCs.

5. *Section 3.2.1, 3.2.3, Page 14, Bullets, Sentence 1, Table 1. Section 3.2.3 notes that seven additional VOC constituents were detected on other Crawford Station parcels, so these VOCs were added to the VI analyte list. Based on this evaluation, these seven additional VOCs should also be analyzed in soil and groundwater media at selected locations near the VI sampling locations and potential VOC sources to determine if these media are contributing to any detected VOC impacts in soil gas. Without the analysis of the additional VOCs in the VI investigation are caused by migrating VOCs in groundwater, by some nearby soil source, or perhaps some other ambient source. Therefore, the same VOCs should be analyzed in soil, groundwater, and soil gas so that a multiple lines of evidence evaluation can be performed for VI evaluation, and so that source areas in soil or groundwater for VI COPCs can be determined. The addition of chlorinated VOCs in soil and groundwater media is warranted for this SSWP based on the prior results, as well as the presence of a paint shop and machine shop at the former MGP facility. This comment also applies to the following portions of the SSWP:*
    a. *Section 3.2.2, Page 14, Paragraph 1, Sentence 2.*
    b. *Section 4.2.4, Page 20, Paragraph 2, Sentence 2.*
    c. *Section 4.2.4, Page 21, Paragraph 4, Sentence 3.*
    d. *Section 4.3.1, Page 23, Bulleted List, Sentence 2.*
    e. *Section 4.3.1, Page 24, Paragraph 3, Sentence 3.*
    f. *Table 2, Footnote 6 and 12.*
    g. *Appendix C.*

Response: Based on the historic structures of the Group III parcels and the absence of exceedances for CVOCs, it is proposed that CVOCs will not be carried over into the Group III parcels as additional constituents to the COPC list. Therefore, CVOCs have been removed from the soil gas analysis and will not be included in the soil or groundwater analyses. To address USEPA's concern regarding chlorinated volatile organic compounds (CVOCs) near the former machine shop, data from soil borings previously conducted within the vicinity of the machine shop on Parcel B were evaluated to determine if CVOC were detected. Previous soil boring samples, SP076, SP077 and SP078 were advanced to 20 feet in the vicinity of the machine shop in 2001 (Figure 5B). Samples were collected at various depth intervals between 1 to 10 feet, bgs. (Note that ISB111 and ISB112 were advanced to identify location of NAPL during the investigation were only used for field observations of NAPL and no samples were collected).The samples were analyzed for total VOCs and SVOCs. No CVOCs or PVOCs were detected. Therefore, additional sampling for CVOCs or PVOCs is not deemed warranted near the machine shop. Minor detections at concentrations near the MDL but well below their residential SLs occurred in sporadic locations mainly on parcels O and A, mostly in surface or near surface samples or in deeper samples over 400 feet from the Group III parcel boundaries. No CVOCs were detected in the Groundwater (Tables F1-2). Therefore, CVOC are not included in the COPC list.

6. *Section 3.2.1, 3.2.2, Page 14, Bullets, Sentence 4. Similar to the last comment above regarding VI, Section 3.2.2 includes analysis for 5 additional metals in groundwater that are not included in the soil analytical suite. Therefore, as currently proposed, detections of any of these metals in groundwater will not be able to be evaluated in terms of potential sources in the Group III parcels or other Group parcels. As noted above, COPCs should be consistent between media unless supported by specific logic and documentation. Therefore, the expanded list of metals for groundwater should also be analyzed in the soil samples. Metals analysis would obviously not be needed for vapor media since they are generally not volatile (exception would be mercury).*

Response: Comment is noted and the full COPC list for metals will be used in both soil and groundwater.

7. *Section 4.2, Page 19, Partial Paragraph 1 and Paragraph 2. The text states that "Representative data to be used for site evaluation for the RI are those that likely represent media still present on the Crawford Station Site at the time of the final FS. Therefore, any historical that represents soil that has been or is currently being removed from the Crawford Station Site are no longer considered representative. Additionally, any soils identified for removal as part of the TCRA, will not be evaluated for the RI. Review of the available data for the Group III Parcels indicated no subsurface materials have recently been or are anticipated to be removed, with the exception of Parcel I soils identified for removal under the TCRA". Although prior analytical data may be representative of soils that have been removed from the Site, it cannot be excluded from use in the RI completely. For instance, the presence of certain COPCs detected as part of removal efforts may have applicability in the RI planning and implementation. These data may indicate the presence of certain constituents, or elevated constituent concentrations, in MGP source material such that the RI planning should account for this information. One hypothetical example would be if chlorinated solvents, elevated cyanide, or a particularly elevated concentration of a metal were found in MGP source material. If such instances occurred, it would document an association of the constituents with MGP related impacts, and should thus be included in the RI planning and sampling. The SSWP should state that historic data that represents soil that has been or is currently being removed from the Crawford Station Site will be evaluated to determine if it has a bearing on future RI planning and implementation, but will generally not be used for nature and extent characterization or risk assessment purposes. In addition, the SSWP text above states that no soil removals are anticipated on Group III parcels. This statement is made even before the soil, groundwater, and VI data are generated from the proposed SSWP investigation. This statement should be removed or amended to indicate that potential soil removals are pending review of the forthcoming RI data.*

Response: Historical data that is no longer present will not be eliminated from the RI evaluation process for the Crawford Station Site. The data has been used to determine where previous MPG residuals were found and therefore incorporated into the plan process to determine appropriate locations to sample on adjacent parcels. However, since the MGP residuals in selected area have been removed (along with the samples), this data is no longer representative of current site conditions that are being evaluated under the BLRA and RI/FS. Section 4.2 has been modified to clarify that this data will not be eliminated for planning purposes, but will not be considered representative of current site conditions. An additional statement has been added to indicate that although this data will be used, it is not included in the figures and tables for this SSWP.

8. *Section 4.2.3, Page 20, Paragraph 1, Sentence 2. Add Inhalation to the types of potential exposures by construction workers.*

Response: Comment is noted and inhalation has been included as an exposure route.

9. *Section 4.2.4, Page 21, Paragraph 2, Sentence 5. Figure 5B depicts two buildings over the former Gas Holder on Parcel T, rather than 1. Figure 6A indicates approximately 6 current structures situated over former MGP structures or infrastructure on Parcel T, and 3 buildings on Parcels J and N. Please clarify and correct in text. It is recommended that subslab sampling be conducted within buildings that are currently occupied and exist over former MGP structures such as Parcel T, J, and N. At a minimum, proposed soil vapor probes immediately outside of these 9 structures should be added to assess potential VI impacts adjacent to these buildings as a first phase of investigation. This comment also applies to the following portions of the SSWP.*
    a. *Section 6.6, Page 49, Paragraph 3, Sentence 7.*
    b. *Section 6.6.2, Page 51.*
    c. *Section 6.6.3, Page 52, Paragraph 1, Sentence 1.*
    d. *Appendix D4, Page 9, Soil Vapor and Subslab Soil Vapor, Paragraph 2.*

Response: Initial soil gas probes have been located in the vicinity of historic features that would be most expected to pose a VI issue. If, during the course of soil and groundwater investigations, and it is determined that soil vapor probes are necessary on any Group III parcels to evaluate a potential VI issue, soil gas probes will be installed as indicated in Section 6.6 of the SSWP. This approach is consistent with Section 5.3 of the Final VI Technical Guide. (See further discussion in Appendix F1). The location of the soil probes will be dependent on the location of potential MGP related vapor sources. On Parcel T, contingency soil vapor probe locations have already been located on Figure 5A and 5E in the SSWP to address the most likely areas of concerns that may arise. Using the stepwise and multiple lines of evidence approach, additional soil gas probes will be advanced and sampled if soil and/or groundwater field observation or laboratory analyses reveal MGP residuals that could be a potential source for VI for both current and future buildings.

10. *Section 4.3.1, Page 23, Paragraph 3, Sentence 1. Add "ingestion" to the types of exposures that are possible to subsurface soils.*

Response: Comment is noted and ingestion has been added to the types of exposures that are possible to subsurface soils.

11. *Section 4.3.3, Page 25, Bullets. Direct contact with NAPL, where present, should be added as a potential exposure pathway for construction workers.*

Response: Comment is noted and direct contact with NAPL has been noted as an exposure pathway for construction workers.

12. *Section 4.5, Page 27, Bullet 3. See comment 9 above. VI sampling should not be limited to the currently proposed sampling locations on Parcel T.*

Response: See response to USEPA Specific Comment #9.

13. *Section 6.4.3.1, 6.4.3.2, 6.4.3.3, 6.4.3.4, 6.4.3.5, Figure 6B. Additional soil boring locations are recommended to better characterize potential MGP impacts in the approximate areas indicated by the red circles that have been added to Figure 6B (appended to these comments). Suggested modifications of existing proposed boring locations are indicated with red arrows. Additional groundwater monitoring well locations (inclusive of soil sampling) are recommended to better characterize potential MGP impacts in the approximate areas indicated by the blue circles that have been added to Figure 6B. Please amend the text for each parcel in Sections 6.4 and 6.5 accordingly.*

Response: As requested, additional borings, monitoring well nests, and contingency soil vapor probes have been added to the investigation to better characterize and model Group III parcels. Revisions have been made to include the following new borings and monitoring well nests: Parcel I-MWI103/PI103, Parcel M-MSB115, Parcel J-JSB109 through JSB 114, Parcel N-MWN/PN102 and NSB 107, and Parcel T-TSB113, TSB114, TSB115, MWT104/PT104, and TSV108. Additionally, borings that were requested to be moved via a red arrow have been adjusted on the figures. Figures have been updated accordingly.

14. *Section 6.5.3, Page 42, Paragraph 1, Sentence 2. The wells do not necessarily provide "sufficient" information for VI assessment; soil and soil gas data are also needed for multiple lines of evidence evaluation for VI assessment; delete "sufficient".*

Response: Comment is noted. The word "sufficient" has been removed.

15. *Section 6.5.6, Page 47, Paragraph 2. Although this comment has not been provided previously, please ensure that procedures are in place to allow all monitoring wells to equilibrate before taking groundwater level measurements. Section 6.5.6 does not specify this, nor does SOP 08-01 that covers the collection of groundwater measurements. Only SOP 08-04 includes procedures for allowing wells to equilibrate. It is suggested that SOP 08-01 be modified to include this procedure, especially for a large site like Crawford Station that will have an expansive groundwater monitoring network.*

Response: Comment is noted. Section 6.5.6 has been updated. For consideration of the SSWP and RI/FS schedule, the SOP will be updated at later date and under separate cover. The requirement to allow the wells to equilibrate before gauging has been included in the SSWP and is in the other SOPs.

16. *Section 6.5.7 and 6.5.10, Page 48. Statement in the SSWP indicating that COPC lists may be modified by removing a specific COPC for a specific media if not detected in two sampling, should also include "with agreement and approval from USEPA". Consideration for detected constituents across the entire Crawford Site (not just the individual Parcel Group) should be factored into the decision analysis for whether any COPCs are proposed for removal from the COPC list.*

Response: All references to modifying the COPC list in SSWP, Revision 1, will be revised to state "…*with specific agreement and approval from USEPA*." The second sentence in the comment is noted. Evaluation of the MGP residuals at Crawford will be based on the historical location of MGP structures and not arbitrary parcel boundaries and site will be evaluated in its entirety.

17. *Section 6.6, Page 49, Paragraph 3, Sentence 5. Confirm that construction and occupancy information for these buildings will be collected during the sampling event.*

Response: Comment is noted and incorporated in the SSWP text and in Appendix F.

18. *This is in reference to Figure 4.*
    a. *Locations of LUST incidents, currently in use USTs, and SRP areas would be appropriate to include on this figure as they are discussed in Section 2.2.2.1-2.2.2.3. (also see General Comment 2).*
    b. *An area was apparently not visible during the February 2012 reconnaissance. Please provide any updates on the area and amend the SSWP if more recent observations have an impact on the SSWP. If there are updates, this information should be included under "Current Site Characteristics", since it is over two years after the initial site reconnaissance.*
    c. *ID #'s 5, 6, and 9 are shown in the legend but are not on the figure.*

Response: a. All facilities discussed in Section 2.2.2.1-2.2.2.3 are detailed on Figure 4. Currently, the approximate location of the former USTs on Parcel N are known and presented on Figure 5E. Though requested under FOIA, information regarding the location UST/LUST is not available for review for Parcel J. Once the FOIA request is received, the information will be evaluated and provided in the RI Report.

b. At this time, access has not been granted to Parcels J and N and the back portions of that property continue to not be visible from the private access roads at the Crawford Station Site. It continues to be assumed that the surface is composed of asphalt, but until visual observations can be made, Figure 4 will continue to need to be shown as is. Once access is granted and field work begins, the current site conditions will be noted and provided in the RI Report. It will also be determined at that time, depending on the site conditions, if an additional ecological survey is required.

c. Facility Nos. 5, 6, and 9 will be shown on this figure in upcoming SSWP, Rev. 1.

19. *Regarding Figure 5, please clarify whether residential surface soil exposures will be quantified in the HHRA. The recreational exposure pathway analysis (shows as incomplete or insignificant for all pathways) is inconsistent with Section 4.3.3; please modify to be consistent with the text.*

Response: Yes, residential surface soil exposures will be quantified in the HHRA. Figure 5 has been modified to better match Section 4.3.3 of the SSWP text. The figure has been renumbered to Figure 6A.

20. *This is with regard to Appendix C, Page 1, COPC Screening Approach, Bullets, Sentence 2, and Appendix C, Page 2, Supplemental Site-Specific Soil COPC Evaluation, Paragraph 3, Sentence 1. Since most of the areas on the parcels have not been sampled yet, using a 5 percent frequency of detection screening for selecting analytes on these new parcels is not recommended (see comments #3 through #6).*

Response: Comment noted. The 5% frequency evaluation was kept in Appendix C for evaluation of COPC not on the 2007 RAF list of standard COPCs. The sampling plan was developed using a combination of adjacent property information (sampling data) and historical MGP features locations. Based on this available information, sample locations were revised and some samples/analytes added per USEPA comments to strategically placed throughout the Group III parcels to initially evaluate conditions. Using a stepwise approach, additional sampling locations may be warranted to delineate impacts; however, this initial sampling plan provides adequate site coverage to preliminary evaluate the Group III parcels.

21. *Appendix C, Table C-2. Modify the table based on the text comments.*

Response: Comment is noted. Table modified.

22. *Appendix D4, Section 1.2, Page 4, Paragraph 1, Sentence 1. Add text indicating why groundwater will not be used in the future.*

Response: Section 1.2 has been modified to include the reasoning for no groundwater use. The City of Chicago Groundwater Ordinance prohibits the use of groundwater within the limits of the City of Chicago as a potable water source and a Memorandum of Understanding with the Illinois EPA to use the ordinance as an institutional control.

23. *Appendix D4, Page 9, Soil Vapor and Subslab Soil Vapor, Paragraph 2, Sentence 4. Please note that probes installed outside a building under an impervious surface provide an estimate of subslab soil gas concentrations with some level of uncertainty since the building HVAC system may cause a higher accumulation of soil gas under the building. Therefore, where possible, buildings situated on top of former MGP structures should be targeted for sub-slab sampling (See Comment #9).*

Response: -During the 2010 meeting regarding VI, Scenario 2 was developed that address when to use exterior soil gas probes or sub-slab. In the case where the source (e.g., gas holder) is both near or under the building and outside of the building footprint; the building is small; the source is the same inside and outside the building footprint; and a parking lot abuts the building, USEPA indicated that they might make an exception to the first bullet. In this case, sampling beneath the parking lot slab outside the building might be appropriate to predict what may be under the building. It was agreed that this would be handled on a site-specific basis, however, USEPA stressed that if samples are collected outside of a building footprint, they must be sampling the same source that is potentially affecting/near/underneath the building, and the conditions outside the building must be similar to conditions under the building. .As indicated in Appendix D4, in some instances, the building footprint and parking lot areas may both be located over the source material such that a soil gas probe outside the building in the parking lot may mimic the sub-slab soil vapor sample. This is the case with the building on Parcel T that is over the gas holder. This building is small and has several overhead doors and an abutted paved parking lot such that subsurface conditions beneath the parking lot are similar to conditions within the building footprint.

At this time, access has not been granted to Parcel T or to the building over the former gas holder and the depth of groundwater and the building construction details and HVAC system is unknown. Site access is under negotiations. As agreed upon with USEPA on May 3, 2012, an alternative VI plan may be to forego interior (subslab or indoor air) sampling at a building where property access issues prohibit timely implementation of the VI sampling plan. Instead, alternative sampling locations (e.g. exterior soil gas) will be selected that are agreeable to the property owner and provide alternative lines of evidence related to VI in the building. With the additional lines of evidence, the potential for VI within the building will then be further evaluated upon owner's agreement. The location of residual source material, the presence of areas of elevated chemical concentrations in groundwater, building construction and usage information, and property access issues will be factored into the decision of whether soil gas samples will be collected externally to the building or sub-slab within the building. Contingency borings are shown on the figure (Figure 5F) within the building footprint to address this uncertainty.

24. *Appendix D4, Page 9, Soil Vapor and Subslab Soil Vapor, Paragraph 2, Sentence 9. None of this information is discussed in the main SSWP document, so there is no rationale for proposing external soil gas samples rather than subslab samples. Provide this rationale.*

Response: Comment is noted. See response to Comment 23. SSWP text has been modified to reference the Appendix.

25. *Appendix F1, Page 2, Tier 1, Paragraph 5. Selection of VI COPCs for Group III parcels based on other parcels is not appropriate (See Comment #3). There may have been unique uses or spills on Group III parcels, and groundwater and soil have not been characterized yet on most parcels.*

Response: See USEPA Specific Comments #3-6 and #9. Groundwater and soil samples will be collected first to determine the presence of a potential VI source on Parcels J and N and the remainder of T, before soil gas samples will be collected. This will prevent any confusion or misinterpretations of data and is consistent with the Final VI Technical Guide approach.

26. *Appendix F1, Page 8, Current Evaluation Conclusion, Paragraph 2, 1st Complete Bullet. Add soil and soil gas after "groundwater".*

Response: Soil and soil gas were added to the text as noted.

27. *Appendix F3, Page 1, Paragraph 1, Last Sentence. This sentence provides confirmation that soil and groundwater samples should be analyzed for additional analytes, as described in Comments #3 through #6.*

Response: Comment is noted. See response to Comments #3 through #6.

28. *Appendix F3, Page 2, Paragraph 1, Sentence 1. The fact that the VOCs were not detected on or adjacent to Group III parcels is irrelevant since most parcels in Group III have not been sampled yet (See Comments 3-6).*

Response: See response to USEPA Specific Comments #3 through #6.

Editorial comments to be completed as necessary.

Please contact Mr. Naren Prasad of WEC Energy Group at 312.240.4569 if you should have any questions regarding the content of this letter.

Sincerely,

NATURAL RESOURCE TECHNOLOGY, INC.

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John M. Nardozzi. PE
Principal Engineer

cc: Mr. Paul Lake, IEPA (2 hard copies and electronic)
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Site-Specific Work Plan Addendum 2
Group III Parcels

Peoples Gas Light and Coke Company
Crawford Station Former MGP Site
Chicago, Illinois

Project No: 2066

Revision 1

July 2, 2015

Natural Resource Technology

Environmental Consultants

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SITE-SPECIFIC WORK PLAN ADDENDUM 2
GROUP III PARCELS

PEOPLES GAS LIGHT AND COKE COMPANY
CRAWFORD STATION FORMER MGP SITE
CHICAGO, ILLINOIS

CERCLA Docket No. V-W-08-C-917
CERCLIS ID: ILN000510192

Project No. 2066

Prepared For:

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Revision 1
July 2, 2015

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ABBREVIATIONS / ACROYNMS

AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
AST	aboveground storage tank
ASTM	American Standard Test Method
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BLRA	Baseline Risk Assessment
BTEX	benzene, toluene, ethylbenzene, and xylenes
CC	coal carbonization
CERCLA (“Superfund”)	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	CERCLA Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
cm	centimeter
COPC	constituent of potential concern
CORRACTS	Corrective Action Order
CSM	Conceptual Site Model
CSSC	Chicago Sanitary & Ship Canal
CWG	carbureted water gas
DNAPL	dense non-aqueous phase liquid
DQO	data quality objectives
EDR	Environmental Data Resources, Inc.
ESA	environmental site assessment
FINDS	Facility Index System
FOIA	Freedom of Information Act
FS	Feasibility Study
FSP	Field Sampling Plan
ft^3	cubic feet
HASP	Health and Safety Plan
Hg	mercury
HHRA	Human Health Risk Assessment
HSA	hollow-stem auger
HVAC	heating, ventilation, and air conditioning
IAC	Illinois Administrative Code
IBS	Integrys Business Support, LLC
IC	institutional control
ICIS	Integrated Compliance Information System
IEPA	Illinois Environmental Protection Agency
kg	kilograms
Koppers	Koppers Company of Pittsburgh
LNAPL	light non-aqueous phase liquid
LUST	leaking underground storage tank

MDL	method detection limit
mg/kg	milligrams per kilogram (PPM)
MGP	manufactured gas plant
mL/min	milliliters per minute
MNA	monitored natural attenuation
NAPL	non-aqueous phase liquid
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFR	No Further Remediation
No.	number
NPL	National Priority List
NRT	Natural Resource Technology, Inc.
OSFM	Office of the State Fire Marshal
OSR	Off-Site Rule
OSWER	Office of Solid Waste Emergency Response
PADS	Polychlorinated Biphenyl Activity Database System
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PGL or Peoples Gas	The Peoples Gas Light and Coke Company
PID	photoionization detector
PPE	personal protective equipment
ppb	parts per billion (µg/kg)
ppm	parts per million (mg/kg)
PVC	polyvinyl chloride
PVOC	petroleum volatile organic compound
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RAF	Risk Assessment Framework
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RI	Remedial Investigation
RI/FS	Remedial Investigation and Feasibility Study
RSLs	Regional Screening Levels
S.	South
SFHA	Special Flood Hazard Area
SL	screening level
SOP	standard operating procedure
SOW	Statement of Work
SQG	small quantity generator
SRP	Site Remediation Program
SSWP	Site-Specific Work Plan
SSWP-Addendum 1	Site-Specific Work Plan-Addendum 1
STAT	STAT Analysis Corporation
SVOC	semivolatile organic compound
TACO	Tiered Approach to Corrective Action Objectives
TCRA	Time Critical Removal Action
USEPA	United States Environmental Protection Agency
UST	underground storage tank

VI	vapor intrusion
VOC	volatile organic compound
W.	West
West Fork Channel or Ogden Ditch	West Fork of the South Branch of the Chicago River
40 CFR 300	Title 40 of the Code of Federal Regulations, Part 300
°F	degrees Fahrenheit
µg/kg	microgram per kilogram
µg/L	microgram per liter

1 INTRODUCTION

1.1 Overview

This Site-Specific Work Plan (SSWP), Addendum 2, Revision 1.0 describes procedures and tasks necessary to support completion of the Remedial Investigation and Feasibility Study (RI/FS) at the former Crawford Station manufactured gas plant (MGP) located in Chicago, Illinois (Figure 1). This SSWP was prepared in accordance with an Administrative Order on Consent (AOC) and Statement of Work (SOW) executed between the United States Environmental Protection Agency (USEPA) and The Peoples Gas Light and Coke Company (PGL) on October 31, 2008, Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Docket No. V-W-'08-C-917 (USEPA, October 2008). This SSWP was also prepared in accordance with applicable federal statutes and regulations, including CERCLA (i.e., the "Superfund" program) contained in 42 USC §9601 et seq., and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), contained in 40 Code of Federal Regulations (CFR) §300.

PGL, a subsidiary of WEC Energy Group, owned the former Crawford Station MGP (referred to herein as the 'Crawford Station Site'). WEC Energy Group is managing the RI/FS activities at the Crawford Station Site on behalf of PGL. The USEPA identification for the Crawford Station Site is ILN000510192.

The primary project contacts include the following:

WEC Energy Group Contact:	Mr. Naren M. Prasad, P.E. Senior Environmental Engineer 200 East Randolph Drive, 24th Floor Chicago, Illinois 60601 Telephone: 312.240.4569
USEPA Region V Contact:	Mr. Ross del Rosario Remedial Project Manager 77 West Jackson Boulevard, Mail Code: SR-6J Chicago, Illinois 60604 Telephone: 312.886.6195

1.2 Objectives

MGP residuals were identified within, and in the vicinity of, former MGP structures, as well as within sediments in a portion of the adjacent Chicago Sanitary & Ship Canal (CSSC). Remediation is ongoing in

selected areas through removal under a Time Critical Removal Action (TCRA) implemented under a separate USEPA issued AOC (Docket No. V-W-11-C-981, dated October 12, 2011). However, soil, groundwater, and river sediment exhibiting MGP residuals have not been sufficiently delineated throughout the entirety of the Crawford Station Site. The overall objective of the RI is to fully delineate the MGP residuals at the Crawford Station Site.

Because of the size and complexity of property parcel ownership, the RI is being conducted in a phased approach, as detailed in Section 1.3 of this SSWP. The SSWPs for each phase of the investigation are being prepared separately, and specify the procedures for identifying and evaluating the nature and extent of affected soil, groundwater, and soil vapor in the upland portion of the Crawford Station Site as well as affected sediment and surface water in the CSSC. The data collected will be used to perform a Baseline Risk Assessment (BLRA) that will evaluate the Crawford Station Site's risks to human health and the environment. An FS will also be prepared, upon completion of the RI, to develop and evaluate remedial alternatives.

1.3 RI Approach

The Crawford Station Site is approximately 260 acres and has been subdivided into 22 parcels, designated as Parcels A through V[1]. PGL owns and operates Parcel O, A, B, K and L. The remaining parcels are owned by others. Since MGP operations ceased, various investigations and response actions were completed, by PGL and others. A Completion Report (Natural Resource Technology, Inc. [NRT], December 2011] describes the investigations and response actions previously performed at the Crawford Station Site (prior to December 2011).

A meeting led by USEPA was conducted on January 24, 2012, whereby it was mutually agreed upon by all parties involved that a phased approach was appropriate for conducting the RI activities on the Crawford Station Site. This approach was selected due to the size and complexity of the Site as well as the number of different owners of the various parcels. Based on this phased approach, the Crawford Station Site was divided into four groups of parcels, as shown on the following table and on Figure 2:

[1] Parcel V was added to the list of Parcels during preparation of the Group II parcels. A portion of Parcel F has an NFR letter; therefore the portion of Parcel F not included in the NFR letter and will be referred to as Parcel V. Parcel F changes were discussed with USEPA prior to approval of SSWP, Addendum 1.

Parcel Groupings

RI Group	Parcels/RI Work Elements
I	▪ Parcels K, P, Q, U, and portions of O (excludes portions of Parcel O that underwent a TCRA that was completed in the summer of 2013) ▪ Baseline well assessment of previously installed wells on PGL-owned parcels ▪ Initiate site-wide groundwater assessment
II	▪ Parcels C, D, E, F, G, H, L, R and V (excludes portions of Parcel L undergoing TCRA and Parcel F [see table note]) ▪ Portions of Parcels A and B within the former river channel (West Fork of the South Branch of the Chicago River) ▪ Continue site-wide groundwater assessment
III	▪ Parcels I, J, M, N, and T
IV	▪ Parcels A, B, and S ▪ Portions of Parcel O located within the TCRA that was completed in the summer of 2013, if appropriate ▪ CSSC sediments

Table notes: Parcel F has a "No Further Remediation" letter from the IEPA and will be excluded from the Group II field work.

This phased approach was reflected in SSWP - Group I (NRT, October 2012) and SSWP, Addendum 1 - Group II (NRT, January 2014), which addressed the first two RI Groups in the phased approach. This SSWP, Addendum 2 addresses the proposed RI activities on the Group III parcels.

The Completion Report (NRT, December 2011) did not identify available investigative or remediation reports within the Group III parcel boundaries. Subsequent to the issuance date of the Completion Report, investigations were conducted at Parcel I by NRT and information of investigations completed on Parcel M have been provided to NRT and are detailed in Section 2.4 of this SSWP.

In order to complete the RI activities described in this SSWP, access to areas of the Crawford Station Site not owned by PGL will be required. The proposed parcel groups are subject to change and will, in part, be dependent on gaining timely access to the parcels that are currently not owned by PGL. The RI activities will focus on supplementing any previously collected data to refine migration and exposure pathways identified within the Conceptual Site Model (CSM), as discussed in Section 4 of this SSWP. Property reconnaissance and sampling activities will be completed to gather appropriate data that can be used to support human health risk assessments and FS evaluations.

A dynamic work plan approach has been developed to collect data necessary to satisfy the Data Quality Objectives (DQO) process recommended by USEPA, and address concerns regarding specific pathways in a timely manner. Representatives from USEPA, USEPA's technical support team, PGL, and consultants to PGL will participate in periodic technical meetings to review the progress of the RI activities and resolve issues that may arise.

2 SITE BACKGROUND AND SETTING

2.1 Site Description and Current Conditions

RI Group III parcels (Parcels I, J, M, N, and T) are located in the central portion of the Crawford Station Site. The locations of these parcels are presented on Figure 2. The owner and occupant information is listed below for each parcel.

Parcel Summary (as of July 2014)

Parcel Name	Address*	PIN(s)*	Current Owner	Current Occupant(s)*
I	3559 S. Kostner Ave.	16-34-400-017-0000 16-34-302-024-0000	Kostner/Chicago, LLC	LaGROU Distribution
J	3721 S. Kildare Ave. 3520 S. Kostner Ave 3824 S. Kostner Ave.	16-34-400-007-0000 16-34-302-025-0000 16-34-302-010-0000	RLR Investments, LLC	R+L Carriers
M	3645 S. Kildare Ave.	16-34-400-009-0000	UIR Campus and Tower, LLC	Truck Storage (unknown entity)
N	4301 W. 36th St.	16-34-400-006-0000 16-34-400-018-0000	RLR Investments, LLC	R+L Carriers
T	3700 S. Keeler Ave.	16-34-400-005-0000	UIR Campus and Tower, LLC	Multiple Occupants

**Larger parcels may have multiple addresses, PINs, and occupants due to their acreage.*

2.2 History of Crawford Station MGP Site Use

This section describes the former MGP operations and the redevelopment and site use since MGP operations ceased.

2.2.1 MGP Operations

In 1921, the Koppers Company of Pittsburgh (Koppers) and PGL entered into an agreement whereby Koppers built, financed, and operated the Crawford Station Site. PGL bought gas and coke manufactured at the plant for distribution to consumers. PGL formally acquired the facility in 1928. By the end of the 1930s, the Crawford Station Site produced three types of gas: coke oven gas, carbureted water gas, and reformed natural gas. The Crawford Station Site was recognized by PGL as its largest production facility at the time.

By 1956, the Crawford Station Site was only used to supply gas and coke when the products were in high demand. Production was temporarily halted between 1958 and 1962 and operations ceased in 1963. The physical dismantling of the Crawford Station Site began in approximately 1956 starting with portions of the coke oven plant. The remainder of the Crawford Station Site was dismantled by 1965. PGL sold 146 of the original 260 acres to First Industrial Realty Company in 1966.

Coal gas production involved heating coal in an airtight chamber (i.e., retort) and driving off volatile aromatic hydrocarbons as a gas. This gas was then passed through purifiers to remove impurities such as sulfur, carbon dioxide, cyanide, and ammonia. The purifiers used trays and sieves containing lime or hydrated iron oxide mixed with wood chips. Production of manufactured gas created a number of different byproducts and wastes, such as various forms of tar, sludge, coke, ash, wood chips, and spent oxide/lime. The predominant byproduct at the Crawford Station Site was coal tar. Byproducts were often stored in tanks and were frequently sold to other companies for direct use or for conversion into other products. The finished gas product was then stored in large pressure relief holders prior to distribution for lighting and heating. The Crawford Station Site produced large amounts of coke and carbureted water gas (CWG), in addition to the finished gas product, for consumer use.

Former MGP-related structures and pertinent historic features on the Crawford Station Site are shown on Figure 3 with an outline of those within Group III parcels. The primary MGP structures for the entire Crawford Station Site included the following:

- Main gas production and retort buildings
- Coke ovens
- Purifying houses
- Water gas sets
- Liquefied petroleum tanks, “oil” tanks, naphthalene tanks, odorant tanks, propane tanks, oxygen tanks, ammonia tanks, and acid storage tanks
- Two 10-million cubic foot water-sealed gas holders
- Tar settling wells, tar extractors, and tar tanks
- A coal and coke storage yard
- Rail yards
- A light oil refining plant

- Oil condensers
- Sumps, pits, and interceptors
- Air compressor buildings
- Pumps and scrubbers
- Ash and coke hoppers and conveyers
- Various equipment, storage, and office buildings

Specifically, with regards to Group III parcels, the following former MGP facilities and site features were present:

- Machine shop (western portion of Parcel I)
- Locomotive watering stations (western portion of Parcel I)
- Oil storage (western portion of Parcel I)
- Ammonia storage tank, tar separating tank, and tar storage tanks (central portion of Parcel I)
- Liquor set basin (eastern portion of Parcel I)
- Quenching station (southern portion of Parcel M)
- Coke car, haul engine house, coke car haul (southwestern portion of Parcel M)
- Hot drain tank, primary coolers, and electrical substation (northern portion of Parcel M)
- Battery and ovens (central portion of Parcel M)
- Coke and coal storage piles (throughout Parcels J and N)
- Mixer building (eastern portion of Parcel N)
- Gas holder (northern portion of Parcel T)
- Pilot plant, booster building, and gas production building (northern portion of Parcel T)
- Unspecified tanks (central portion of Parcel T)
- IGT oxygen storage yard (eastern portion of Parcel T)
- Main transformer station, breaker building, and engine house (southwestern portion of Parcel T)

Historically, a former surface water body, the West Fork of the South Branch of the Chicago River (also known as West Fork Channel or Ogden Ditch), bisected the Crawford Station Site from the southwest to the northeast. This water body historically conveyed water from an area known as Mud Lake to the South Branch of the Chicago River, which in turn discharged to Lake Michigan. Following the construction of the CSSC in 1900, the flow direction of the Chicago River was reversed and water now flows from the South Branch to the CSSC and ultimately discharges to the Mississippi River (Solzman, 2006). Based on available historical aerial photographs and Sanborn Maps, the portion of the West Fork Channel bisecting the Crawford Station Site was filled in between 1938 and 1951. The reviewed historical aerial photographs and Sanborn Maps are provided in Appendix A1. The approximate location of the former West Fork Channel is also shown on Figure 3.

Environmental Data Resources, Inc. (EDR) was retained to conduct a search of available environmental database records to identify listings associated with the former MGP operations (EDR, October 2011). A copy of the EDR report is provided in Appendix A2. According to the EDR report, the former MGP is listed in the following regulatory databases: Integrated Compliance Information System (ICIS) database, the Facility Index System (FINDS) database, the CERCLA Information System (CERCLIS) database, the Resource Conservation and Recovery Act (RCRA)-Conditionally Exempt Small Quantity Generator (CESQG) database, the Polychlorinated Biphenyl (PCB) Activity Database System (PADS), the Manifest database, the Illinois Environmental Protection Agency (IEPA) Site Remediation Program (SRP) database, the Tier 2 database, and EDR's proprietary "Manufactured Gas Plant" database. In addition to the EDR, Brown's Directory Information was obtained and is provided in Appendix A3. Cultural and Natural Resource Data are provided in Appendix A4.

2.2.2 Commercial/Industrial Operations at the Crawford Station Site

Certain areas of the former Crawford Station Site began to be re-developed in approximately the late 1960s by distribution and commercial businesses, as well as electric utilities. Some of the parcels in RI Group III are currently in use, as described in Section 2.1 of this SSWP.

EDR was retained to conduct a search of available regulatory records to identify potential sources of environmental concern at the Crawford Station Site that are not related to the former MGP operations. Additionally, available historical Sanborn Maps and aerial photographs were reviewed. Historical and current land uses of potential concern not related to MGP operations are detailed in the following sections. The properties detailed are only those located within RI Group III boundaries. At this time, both Parcels I and M are currently undeveloped and being used for trailer parking. Please refer to SSWP - Group I (NRT, October 2012), Section 2.2.2, for a complete summary of identified parcels located at the

Crawford Station Site that are of potential concern and historic operations not related to former MGP operations. Figure 4 also presents the surface conditions and the on-site non-MGP concerns.

2.2.2.1 Parcel J

EDR Listing: Nation's Way Transport / R&L Carriers / SSCI Joint Venture
4359 W. 36th Street, Chicago, Illinois
Current Owner: R&L Transfer, Inc.

This property is currently occupied by R+L Carriers. Although the EDR-supplied address does not match the current addresses identified by Cook County Assessor, it does align with historical addresses detailed in the historic Sanborn Maps. The current buildings were reportedly constructed in 1989. This property is listed in the RCRA-small quantity generator (SQG) database with no reported violations. In addition, there are seven underground storage tanks (UST) associated with this facility as described below:

UST Summary – Parcel J

UST Identification Number	Capacity (gallons)	Substance	Current Status
1	10,000	Diesel Fuel	Removed
2	10,000	Diesel Fuel	Removed
3	20,000	Diesel Fuel	Removed
4	5,000	Dyed Diesel Fuel	Removed
5	20,000	Diesel Fuel	Currently in Use
6	20,000	Diesel Fuel	Currently in Use
7	5,000	Dyed Diesel Fuel	Currently in Use

This facility is also associated with two IEPA leaking underground storage tank (LUST) incidents, the earliest of which was enrolled November 21, 1990 (Incident No. 903474) and the latest of which was enrolled July 10, 2007 (Incident No. 20070942). The earlier incident was closed on July 28, 2000 via a No Further Remediation (NFR) letter that included a groundwater use and an industrial/commercial land use restriction. The later LUST incident has not yet been closed. The release in the later LUST incident was reportedly diesel fuel. A FOIA request has been requested for these USTs and LUST incidents. No data has been received at the time of this SSWP, but upon receipt, will be reviewed and the information incorporated into the RI Report.

2.2.2.2 Parcel N

EDR Listing: Coca-Cola USA
4301 W. 36th Street, Chicago, Illinois
Current Owner: RLR Investments, LLC

This property is currently occupied by R+L Carriers. The buildings on the property were reportedly constructed in 1979. This facility was formerly operated by Coca-Cola, and is listed in the following databases: Institutional Controls (IC), SRP, UST, and Hazard Waste Annual Report (HWAR). There are reportedly seven USTs associated with this property as described below:

UST Summary – Parcel N

UST Identification Number	Capacity (gallons)	Substance	Current Status
1	10,000	Diesel Fuel	Removed
2	20,000	Diesel Fuel	Removed
3	10,000	Diesel Fuel	Removed
4	10,000	Diesel Fuel	Removed
5	10,000	Diesel Fuel	Removed
6	1,000	Lube Oil	Removed
7	1,000	Used Oil	Removed

An IEPA LUST incident was not reported for this facility; however, approximately 6.7 acres of this facility were enrolled in the IEPA SRP. This IEPA SRP listing was subsequently closed on September 27, 1999 via issuance of a focused NFR letter which stipulated a groundwater use restriction. Information regarding the USTs was received from a FOIA request. The approximate location of the USTs is provided on the soil boring figures (Figure 5E). The UST information is included in Appendix J.

2.2.2.3 Parcel T

EDR Listing: Institute of Gas Technology / Ficht Commercial Cleaners / Urban Investment Research Corp. / Road Link
4201 W. 36th Street, Chicago, Illinois (Parcel T)
Current Owner: UIR Campus & Tower, LLC

This property is within Parcel T, which is currently a large truck yard in the southern portion of the Site. The buildings on this property were reportedly constructed in 1979. According to the EDR report and the Illinois Office of State Fire Marshall (OSFM), this facility is associated with a 6,000-gallon gasoline UST and a 5,300 fuel oil UST, both of which are listed as having been removed. This property is also listed as a RCRA-SQG. Violations have not been recorded by the USEPA in association with the RCRA-SQG listing. Additionally, this property is listed in EDR's proprietary Historical Cleaners database as a commercial cleaning business in approximately 2003. A review of historical Sanborn Maps depicted "Gasification" buildings, a "Coal Hydro Pilot Plant", and several smaller outbuildings. These buildings were associated with the former Institute of Gas Technology and were likely used for demonstration purposes rather than for actual consumer distribution.

2.3 Adjacent Properties

See SSWP - Group I (NRT, October 2012), Section 2.3, for details on potential off-site source releases associated with adjacent properties located within 1,000 ft of the Crawford Station Site.

2.4 Previous Investigation Summary

Previous site investigations on the Crawford Station Site and adjacent properties are discussed in the Completion Report (NRT, December 2011). A discussion of data quality with regards to these previous investigations is included in SSWP - Group I (NRT, October 2012), Section 2.4.2. However, at the time of the Completion Report and SSWP – Group I, no information regarding previous site investigations were available for Group III. Previous investigation information for Group III parcels is provided in the following sections.

2.4.1 Parcel M

Subsequent to the Completion Report, subsurface investigation data was obtained for Parcel M. The reports obtained from the current parcel owner are:

- Preliminary Results: 36th Street Option Property Site Investigation, LFR Levine-Fricke, March 10, 1999
- Phase I Environmental Site Assessment, LFR Levine-Fricke, August 12, 2002
- Phase II Environmental Site Assessment Report, Professional Services Industries, Inc. (PSI), March 2013

Two separate sampling events occurred on Parcel M. The first known sampling event occurred in March 1999 (LFR Levine-Fricke, March 1999, Appendix A5). A total of 27 subsurface soil samples were collected and submitted for laboratory analysis. The analytical results revealed that constituents were below IEPA Tiered Approach to Corrective Action Objectives (TACO) standards of that time with the exception of samples from borings SB1 and SB3. Samples were collected from depths ranging from 2-16 ft below ground surface (bgs). “Tar-like” substances were observed in SB3 during this investigation. Boring SB3 is located near a former pipeline and several other MGP-related features in the northwestern portion of Parcel M. The second sampling event occurred in March 2013 in the vicinity of the location of a proposed natural gas station on the northwestern portion of the parcel (PSI, 2013, Appendix A5). A total of five soil samples were collected to a maximum depth of 8 ft bgs. Four of the five samples exceeded IEPA TACO standards. Constituents that exceeded standards include benzo(a)anthracene,

benzo(a)pyrene, mercury, dibenz(a,h)anthracene, benzo(b)fluouranthene, indeno(1,2,3-cd)pyrene, and naphthalene. No groundwater samples were collected.

Parcel M has recently been included as part of the Time Critical Removal Action planned for summer of 2015.

2.4.2 Parcel I

Additionally, in December 2013, 15 soil borings (ISB101 through ISB115) were advanced on Parcel I to further delineate known areas of MGP residuals (along the southern boundary of Parcel L). The investigative work was completed by NRT as part of the TCRA-delineation of non-aqueous phase liquid (NAPL), and was mainly accomplished through visual, olfactory and photoionization detector (PID) response observations in the field. Soil boring logs are provided in Appendix B. Areas of MGP residuals were identified on the central portion of Parcel I in the vicinity of former tar decanters and within the former West Fork Channel area along the northwestern corner of Parcel I. Excavation areas, extending to 29 ft bgs in the former West Fork Channel area and to 11 ft bgs in the central portion of Parcel I, have been proposed to remove these MGP residuals. However, as of the issuance of this SSWP, no removal action activity has occurred.

2.5 Previous Actions

Prior actions performed within RI Group III parcels at the Crawford Station Site have included activities under the IEPA LUST and SRP programs, as noted above, on Parcels J, N and T. Note that these actions were not associated with the former MGP activities.

2.6 On-Going Actions

As previously mentioned, USEPA has issued a separate AOC (Docket No. V-W-11-C-981, dated October 12, 2011) allowing a TCRA to be implemented at the Crawford Station Site. To date, removal actions have been completed on portions of Parcels A, B, and O (Group IV) and are ongoing at Parcel L (Group II). There are no current on-going removal actions at the RI Group III parcels. An area within Parcels D, I and M are proposed to be excavated. As of the issuance of this SSWP, work plans for removal actions have been submitted to the USEPA; however, these proposed removal actions have not commenced. Activities within Parcels D, I and M are being discussed between the involved parties and may potentially begin prior to commencement of RI activities.

3 CURRENT SITE CHARACTERISTICS

A complete discussion of current site characteristics was provided previously and therefore is not reiterated in this SSWP. See SSWP - Group I (NRT, October 2012), Section 3 and associated Appendices for a discussion of the current site characteristics, including topography, drainage, geology, hydrogeology, meteorology, population, land use, cultural and natural resource features, previous investigation findings, current site status, areas of potential concern, and previous investigation results.

3.1 Areas of Potential Concern

The discussion below provides an overview of conditions, based on the investigations that have been performed to date, mainly on parcels surrounding Group III. Figure 5A shows the relative degree and extent of affected soil across the Group III Parcels and surrounding parcel study areas. The figure presents observations based solely on visual, olfactory and PID notations on the boring logs with the exception of the 1998 historical analytical data on Parcel M. The Parcel M data is based on analytical results that exceed IEPA TACO Tier 1 industrial/commercial soil screening levels for PAHs instead of boring log information, because the logs were not available.

Where extent of MGP residuals presented on Figure 5A are based on boring log observations, locations where no evidence of potential MGP residuals was observed does not also mean that all soil analytical results were below residential screening values. Similarly, PID response or the observation of discolored/stained soil alone does not imply the presence of MGP-related residuals. Locations where sheens, light NAPL (LNAPL), and dense NAPL (DNAPL) were noted are intended to illustrate the distribution of more highly affected areas of the Crawford Station Site for RI planning purposes.

3.1.1 Parcel I

Parcel I was located on the southern portion of the former Gas Production Area. Parcel I has two MGP features that have potential for MGP residuals; the former West Fork Channel was located on the Northwest corner of the parcel and Tar Storage and Tar Separating Tanks were centrally located on the parcel. The December 2013 investigation identified MGP residuals. The extent of the residuals will be further evaluated under this RI.

3.1.2 Parcel M

Parcel M was also located on the southern portion of the former Gas Production Area. A former Tar Decanting Tank was located near the northwest boundary of Parcel M, a former Electrical Substation was located along the northern edge of the parcel and process piping had traversed the parcel. Review of the recently obtained investigation reports indicated potential MGP residual noted (in Boring SB3) near a former process line northwest of the Tar Decanting Tank. The RI will focus on the area of the Tar Decanting Tanks and Electrical Substation and the extent of the possible MGP residuals will be further evaluated under this RI as well as general areal coverage.

3.1.3 Parcels J and N

The main MGP feature on Parcels J and N is the Coal Storage Area, which also intersects with Parcel B. At this time no MGP related soil or groundwater investigations have been completed on these parcels. Nearby site investigation data is limited to borings within Parcel B and neighboring Parcel O. LUST and SRP documentation has been requested from the IEPA through FOIA requests during the first version of this SSWP. The only data available in 2014 from the IEPA was information and location of the former USTs and the investigation on Parcel N. The location of the former USTs is presented on Figure 5E. Since the 2014 FOIA request was made, the IEPA has updated their website and database and new information appears to be available possibly for Parcel J. An additional FOIA request has been made for this new data but is currently unavailable for inclusion in this SSWP. The FOIA data will be reviewed and relevant information will be included in the future RI report. FOIA data received in 2014 is provided for reference in Appendix J.

The Coal Storage Areas are not expected to have significant MGP residual impacts other than coal residuals. However, based on results of investigations on Parcels B and Parcel O, MPG residuals were found southwest of the Coal Storage Area. Ten soil borings have been advanced on Parcel B located within the Coal Storage Area boundaries. Eight of these borings exhibited no visible, olfactory, or PID responses that would suggest potential MGP effects. However, the remaining three borings are located in the extreme southeastern corner of Parcel B and a “tar-like” substance was observed in soil there (CEI-SP125, CEI-SP126, and CEI-SP127). The observed “tar-like” substance was identified in the first six feet of the boring and was described as “coated to saturated.” In addition, soil samples collected on Parcel O in the vicinity of Parcel B also contained “tar-like” materials. Therefore, soil sample placement on Parcels J and N will take into account the location of the potential MGP residuals as well as provide overall coverage.

3.1.4 Parcel T

Parcel T is located in the southeast portion of the Gas Production Area. MGP features located on Parcel T include a former Gas Holder, former Butane and Oil Tanks, and a Main Transformer Station. At the time of the Completion Report and to date, there is no available information regarding historical environmental investigations on Parcel T.

The former Gas Holder was located near the northwest corner of Parcel T in the vicinity of an existing building (Figure 5F. Borings located on adjacent Parcel L approximately 50 to 70 ft north of the former Gas Holder do not show evidence of MGP residuals. Former Butane/ Oil Tanks are located south of one of the larger buildings centrally located on the parcel. A Main Transformer Station was formerly located near the southwest corner of the property between two small buildings. The RI will focus on these three former MGP structures as well as general overall site coverage.

3.2 Constituents of Potential Concern

The site-specific constituents of potential concern (COPC) are based on an evaluation of the COPCs found in the Multi-Site CSM (IBS, August 2007), Multi-Site Risk Assessment Framework (RAF) (Exponent, September 2007), and Multi-Site RAF Addendum, Revision 3 (Exponent, July 2014) as well as data collected on the Crawford Station Site and knowledge of historic land use. Over 800 soil samples and groundwater samples from permanent monitoring wells have been collected at the Crawford Station Site on Parcels A, B, D, F, I, K, L, O, P, Q, S, U and V. These parcels encompass most of the area where former MGP production facilities were located as well as broad representative areas of the Crawford Station Site where no MGP operations occurred. Soil and groundwater samples were analyzed for one or more of the following: volatile organic compounds (VOC) (also, standalone analyses for benzene, toluene, ethylbenzene, and xylenes [BTEX]), semivolatile organic compounds (SVOC) (also, standalone analyses for polycyclic aromatic hydrocarbons [PAH]), phenols, PCBs, herbicides/pesticides, metals, and cyanide. Constituents not detected in previous sample analyses were discussed in the SSWP - Group I (NRT, October 2012) in Section 3.9.1 (soil) and Section 3.9.4 (groundwater). The analytes that were not detected during previous sampling are not considered COPCs for the Crawford Station Site.

Site-specific selection of COPCs is partially based on current and former land use. As described in the Completion Report (NRT, December 2011) and Section 2.2.1 of this SSWP, the MGP facility was constructed in 1921 and was closed in the early 1960s. PGL sold 146 of the original 260-acres to First Industrial Realty Company in 1966. The parcels were subsequently developed by a variety of commercial

storage, distribution, and transportation businesses. Therefore, non-MGP residuals are also likely to be present.

Analyses of the historic site data and details regarding the selection of the site-specific COPCs are presented in Appendix C for soil and groundwater. The COPC screening results are summarized below. The site-specific COPCs are listed in Table 1. A site-specific summary of the Sampling and Analysis Plan (SAP) is provided on Table 2. Table 2 also includes analytical data and geotechnical testing needed to support the FS.

3.2.1 Soil COPCs

Based on previous sampling events and the analysis documented in Appendices C and D of SSWP Addendum #2, Rev 1.0 for Group III, soil samples collected for the RI will be analyzed for a modified Multi-Site RAF MGP COPC list. The modified list includes the standard list from the 2007 RAF and a few additional Crawford specific COPCs. The list is provided on Table 1 and includes the following:

- Petroleum volatile organic compounds (PVOC): BTEX,1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene
- PCBs (for select sample locations near former MGP operations that potentially used PCBs in their operations on Parcels M and T)
- PAHs: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene pyrene, and 2-methylnaphthalene
- SVOCs: carbazole and dibenzofuran
- Inorganic compounds: aluminum, antimony, arsenic, barium, cadmium, chrominum, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc

The selection process for site-specific COPCs for soil also considered the property use history not related to the MGP. Based on current and/or historical land use on Group III parcels to be evaluated during the RI, no modification to the soil COPC list above is warranted. Appendix C re-iterates the initial site-specific soil COPC evaluation for the Crawford Station Site.

3.2.2 Groundwater COPCs

The RI conducted on the Group III parcels will include a site-wide assessment of groundwater quality. As was determined previously for the Crawford Station Site in the SSWP for Group I, and based on available data for both soil and groundwater, the site-specific COPCs for groundwater will include the same COPCs

selected for soil except that available cyanide will replace total cyanide as listed on Table 1. Additionally, dissolved metals will be analyzed for during sampling events to provide more data for the feasibility study and risk assessment. Sampling for dissolved constituents provides a more accurate representation of constituents in the groundwater media. These constituents are included on the Multi-Site RAF COPC list and they will be carried forward as site-specific COPCs until additional groundwater data is collected and future screening indicates that their removal from the COPC list is appropriate. Re-evaluation of the COPC list based on results from initial soil and groundwater sampling on Group III parcels will use the process described in Appendix C.

3.2.3 Soil Vapor COPCs

Based on the analysis documented in Appendix F3, soil vapor samples collected during implementation of this SSWP will be analyzed for the standard list of vapor intrusion (VI) COPCs for MGP sites as listed on Table 1.

3.2.4 Surface Water and Sediment COPCs

Surface water and sediment sampling is not part of the Group III media set and will not be sampled under this SSWP, Addendum 2 – Group III. The COPCs for these media are presented in SSWP-Group I.

4 SITE-SPECIFIC CONCEPTUAL SITE MODEL SUMMARY

The CSM identifies the primary MGP-related components which includes the COPCs, potential transport mechanisms and relevant human and ecological receptors. A Site-Specific CSM was developed for Parcels I, J, M, N, and T (Group III parcels) (Figure 6a), which is based on the Multi-Site CSM (IBS, August 2007a). The Site-Specific CSM provides the framework to identify data needs to characterize the Group III parcels on the Crawford Station Site and evaluate potential human health and ecological risks. The Site-Specific CSM was refined to reflect conditions observed during the reconnaissance activities completed in July, 2011 and February, 2012 as well as information summarized in the Completion Report (NRT, December 2011) and Completion Report Addendum No. 1 (NRT, January 2012). In addition, a graphical Site-Specific CSM (Figure 6b) was developed for the Group III Parcels to provide a visual interpretation of the media involved as well as the current conditions of the site. The Site-Specific CSM and risk assessment approach will be routinely reviewed to refine the media of concern and individual pathways as more data are collected.

4.1 Site Reconnaissance

The primary purpose of a site reconnaissance is to evaluate whether exposure pathways are complete for human and ecological receptors. The reconnaissance also identifies existing land use and site conditions and completes ecological habitat assessments. If additional information is obtained during the RI that would suggest exposures to other receptors, further assessment of these exposure pathways will be addressed in the BLRA.

For the Crawford site, two areas are identified for human and ecological exposures: 1) upland, where the former MGP processes were located, and 2) the adjacent CSSC surface-water body. Two site reconnaissances were completed mainly in the upland area. A site reconnaissance and ecological habitat assessment was conducted on the upland portion of the Crawford Station Site on July 19, 2011 by an Exponent environmental biologist and NRT engineer during a visit to the Crawford Station Site. On-site observations were made for PGL-owned Group I parcels (for which there was access on the day of the site visit) and from the PGL-owned parcels and public rights of way for remaining Groups II, III and Group IV parcels. The ecological checklist provided in the RAF was completed and photographs taken to document site conditions (refer to Appendix A6 of SSWP - Group I; NRT, October 2012). The ecological

habitat assessment is provided in Appendix A6 of this SSWP. These observations were supplemented with review of aerial coverage of the Crawford Station site conditions as present in Google Earth.

A second site reconnaissance visit was completed in February 2012 of the upland portion of the Crawford Station Site (i.e., excluding the CSSC). The purpose of this reconnaissance was to supplement the earlier visit on July 19, 2011. During the reconnaissance of the upland portion of the Site, observations were made of site conditions to understand human and ecological receptors having the potential to be exposed to MGP residuals which will require evaluation within the BLRA.

The overall site reconnaissance observations and site condition are reiterated for Group III in the following paragraphs. Additional information regarding conditions (such as zoning information, post-MGP operation uses, and physical features) on the Crawford Station Site is contained in the Completion Report (NRT, December 2011) which was used, along with the observations made during the reconnaissance, to develop the Site-Specific CSM for Group III.

The Crawford Station Site is considered industrial land use. The Site is zoned by the City of Chicago specifically for manufacturing land use. Refer to Figure 6 of the SSWP-Revision 1 (NRT, August 2012). Specific Group III parcel land uses and physical features include the following:

- Parcel I is approximately 4.47 acres, and is currently owned by Kostner/Chicago, LLC and is operated by LaGROU Cold Storage Partnership and occupied by a truck staging area with no buildings. The surface of the parcel is covered with a pervious material in the form of crushed asphalt. The property is enclosed by a chain link fence with one main entrance along the western boundary.

- Parcel J is approximately 11.75 acres, and is currently owned by R.L.R. Investments, LLC and occupied by R+L Carriers and a portion of one large building; the remainder of the building in on Parcel N. The majority of the parcel is covered with a pervious material in the form of crushed asphalt, with minor areas of solid surfaces. The parcel is enclosed by a chain link fence and other security fencing and its main entrance is controlled by security.

- Parcel M is approximately 5.54 acres, and is currently owned by UIR Campus and Tower, LLC and occupied by a truck parking lot operated by an unknown entity. The surface of the parcel is covered with a pervious material in the form of crushed asphalt. The property is enclosed by a chain link fence with one main entrance along the southern boundary.

- Parcel N is approximately 6.22 acres, and is currently owned by R.L.R. Investments, LLC and occupied by a R+L Carriers and a portion of one large building; the remainder of the building in on Parcel J. The majority of the parcel is covered with a pervious material in the form of crushed asphalt, with minor areas of solid surfaces. The parcel is enclosed by a chain link fence and other security fencing and its main entrance is controlled by security.

- Parcel T is approximately 9.08 acres, and is currently owned by UIR Campus and Tower, LLC and occupied by several tenants and several structures. The majority of the parcel is covered by impervious asphalt material and concrete. Portions of the boundaries of the parcel are enclosed by a chain link fence, although the northern boundary of the parcel is only partially enclosed.

Group III parcels are confined to the upland area and are similarly configured to Group II parcels, being currently or previously developed with little to no observed ecological habitats. The ground surface is primarily covered with crushed asphalt and gravel, and minor areas of concrete. No natural areas or bodies of surface water were observed. Site observations were made from the parcel boundaries, due to access issues. Once site access is granted and site observations can be made on-site, the need for additional ecological assessment will be determined, if site conditions are different than anticipated.

At present, the area immediately surrounding the Site includes manufacturing and industrial uses. However, a high school (Little Village Lawndale High School) and a public park (Piotrowski Park) are located just beyond the Crawford Station Site to the north along the north side of the railroad tracks on Parcel R. With this exception, the future land use of the Crawford Station Site and immediately surrounding area is expected to remain industrial in the future.

4.2 Media of Potential Concern

The Multi-Site CSM (IBS, August 2007a) considered the following as media of potential concern for the Crawford Station Site:

- Surface and subsurface soil
- Groundwater
- Soil vapor
- Surface water
- Sediment

The media of potential concern will be evaluated as part of the risk assessment to review if response actions, including risk management tools, are warranted to manage the potential risk to human health and the environment on the Crawford Station Site.

The risk assessment of the media of potential concern will be based on existing data and new data to be collected as described in Section 6 of this document and in the Site-Specific Quality Assurance Project Plan (QAPP) (Appendix D1). Previously collected data were assessed for data quality in Section 2.4.2 of

SSWP – Group I (NRT, October 2012), and further assessment of the newly obtained historical data will be performed prior to using data as part of the RI per the guidelines in the Site-Specific QAPP (Appendix D1). The data assessment considered (and will continue to consider in the case of newly obtained historical data and RI data) the age and quality control (QC) procedures of the data, detection limits, and the likelihood that the data are still representative of current conditions. Representative data to be used for site evaluation for the RI and the BLRA are those that likely represent media still present on the Crawford Station Site at the time of the final FS. Therefore, any historic data that represents soil that has been or is currently being removed from the Crawford Station Site will not be presented in figures and tables since these data are no longer representative of current site conditions. However, these data have been and will continue to be used for RI planning and will not be eliminated during the evaluation. Additionally, any Group III soils identified for removal as part of the TCRA, will not be evaluated for the RI, since the material will also not represent site conditions at the time the site-wide RI/FS is complete. Review of the available data for the Group III parcels indicated no subsurface materials have recently been or are currently anticipated to be removed, with the exception of Parcel I and M soils identified for removal under the TCRA.

Similarly, historic groundwater data are not considered completely representative of current conditions because of the age of the data. Historical data will be used for planning purposes only.

As referenced, the COPCs for each media are discussed in Section 3. An analysis of the site historic data and details regarding the selection of the site-specific COPC lists are presented in Appendix C for each media of potential concern.

4.2.1 Surface/Near Surface Soil

The majority of the land on Parcels I, J, M, N, and T is covered by buildings, pavement, or crushed pavement, which may prevent or may not be suitable for collection of surface soil samples.

Surface and near surface soil will be evaluated, if possible, as a medium of potential concern because of the potential for current or future occupants to be exposed to COPCs, if present. Surface soil from 0-6 inches bgs is defined here as surface soils for purposes of the risk assessment because people would have the greatest potential to be exposed to these soils if they are present. Additionally, soil from 6-24 inches bgs is defined in this SSWP as near-surface soil. People will have less potential to be exposed to these soils, but under certain conditions exposure to near surface soils may be possible (e.g. non-commercial activities like shallow soil excavation for utility work). The surface soil and near-surface soil samples will be used together to characterize potential exposure and risk to a range of

human receptors in the BLRA. Surface soil sampling is proposed at locations across the study area. The sampling strategy is presented in Section 6.4.2.

4.2.2 Subsurface Soil

Subsurface soil, defined here as being located either at or below 2 ft bgs or beneath pavement, will be evaluated as a medium of potential concern because past investigations have detected DNAPL/tar and LNAPL/sheen in soil borings at the Crawford Station Site. Subsurface soil sampling is proposed on each of the RI Group III parcels.

Humans are less likely to be exposed to subsurface soils because it is normally inaccessible. However, if redevelopment or underground utility work occurs, construction/utility workers could be exposed to subsurface soils. In addition, if subsurface soils are brought to the surface during excavation, the potential for exposure to these soils by other human receptors increases. For these reasons, subsurface soil data will be used to evaluate potential risks to a range of human receptors in the BLRA.

4.2.3 Groundwater

The public water supply for the City of Chicago is obtained from Lake Michigan; therefore, consumption of groundwater is not expected by residential or worker populations. The City of Chicago has a groundwater ordinance that prohibits the use of groundwater as a potable water source and restricts the installation of potable wells. The City of Chicago and the IEPA have a Memorandum of Understanding (MOU) that allows the groundwater ordinance to be used as an institutional control (See Appendix E for the City's Groundwater Ordinance [City of Chicago, 1997]). In contrast, the water table on the Crawford Station Site is perched creating the potential for VI from impacted groundwater, if present, and from dermal (i.e., skin contact) and inhalation exposure during construction activities if MGP residuals are present. Therefore, the potential for such exposure to groundwater will be further evaluated with the Group III parcels.

Groundwater will be evaluated on a site-wide basis. Due to the presence of previously existing wells, a baseline well assessment (Section 6.5) was completed to determine the condition and utility of existing wells on site (NRT, SSWP, Rev. 1). Existing wells meeting usability criteria will be used along with additional wells that will be installed throughout the Site (Section 6.6) over time to complete the site-wide evaluation. Overall groundwater quality and flow on Site will be assessed, along with the site hydrological conditions.

4.2.4 Soil Vapor

A preliminary soil vapor assessment was prepared for the Crawford Station Site and specifically evaluated the VI potential for the Group III parcels. The assessment is presented in Appendix F1. The soil vapor assessment has determined that Group III soil vapor has the potential to be impacted with MGP-related constituents because subsurface soil at surrounding parcels (Parcel B, O, and L) is affected by volatile MGP-constituents (e.g., naphthalene and PVOCs). There is also potential for Group III soil or groundwater to be affected and thereby, the soil gas could potentially be affected. Affected soil vapor near or beneath a Group III parcel structure could potentially enter a building through cracks in the foundation floor and pose a risk to occupants and pose a potential risk to construction/utility site workers under redevelopment or subsurface utility work exposure scenarios.

To date, soil vapor samples have not been collected on the Crawford Station Site. Multiple lines of evidence are required to determine the need for a VI assessment, beginning with the presence of volatile MGP residual in the soil and groundwater. Detailed procedures for VI assessment can be found in Appendix F.

The first step of the VI assessment is to evaluate whether VI COPCs are present in close proximity or “setback zone” (approximately 30 -100 ft depending upon constituent type) of occupied buildings or preferential native or man-made migration pathways. The need for determining the extent of soil vapor characterization on or adjacent to the Crawford Station Site will be assessed based on evidence of an MGP residual source by the results of the proposed RI sampling, initially through soil and groundwater sampling (i.e. multiple lines of evidence). Additionally, based on previous discussions and meeting with the USEPA, any building located over a former MGP structure that could potentially contain MGP residual (e.g. gas holder) could pose a potential vapor intrusion condition will be considered a candidate for VI investigation (initial or contingency). If any existing occupied buildings are located over a former MGP structure, a VI assessment will be completed. One building currently exists on Parcel T, located over the former gas holder; therefore, exterior soil vapor samples are proposed in this SSWP. If VI COPCs are present within close proximity of a building, additional vapor probes will be proposed as presented on Figure 5F and will be expanded to surrounding buildings if necessary. Similarly, if VI COPCs are found in the soil or groundwater within the setback zone of Parcels J and N buildings or manmade pathways, a soil gas survey will be completed. If known VI COPCs are not located within close proximity of a building structure and a former MGP structure is not located below a building structure, then the VI exposure pathway will be considered incomplete for that building under current conditions. This approach is consistent with USEPAs final Technical Guide (USEPA, 2015). It should be noted that in areas of Group III where VI COPCs are located in the soil (Parcel I has NAPL), but no buildings are currently in close

proximity of the contamination, the potential for VI in these areas based on future building construction will be addressed in the FS considering appropriate risk management techniques (e.g., institutional controls to prevent the VI pathway from becoming complete). This is intended to indicate to future potential building developers that there may be a potential risk of VI to be considered during building construction, as discussed in the recent USEPA Technical Guide (USEPA, 2015).

Sumps can act as preferential pathways for contaminant migration and may require special consideration if VI COPCs are in close proximity to the buildings with sumps. The USEPA VI screening levels (SL) are valid only if there are no preferential pathways present that would allow contaminated groundwater or vapors to enter a building, because these preferential pathways may lessen the attenuation of the chemical vapors compared to what was assumed in the development of the VI SLs.

If sampling results indicate the need for additional soil vapor assessment, additional probes may be installed near or in building foundations to assess the migration of soil vapor into indoor air. Soil vapor probes may also be installed in utility corridors to assess preferential migration of vapors or open areas to assess future use scenarios for the property. The decision to install additional soil vapor probes will be made based on the results of the subsurface characterization efforts and building characteristics, and if required, may result in the need for another RI field event.

Additional building information, such as building occupancy; the presence of heating, ventilation, and air conditioning (HVAC); and the presence of basements, sumps, cracks in floor slabs, etc., will be collected when access to the buildings is obtained.

4.2.5 Surface Water

There are no surface water bodies on the Group III parcels. The only surface water relative to the Crawford site is the CSSC. Therefore surface water is not being proposed in this SSWP addendum.

Surface water samples have not been previously collected. Investigations are needed to assess surface water quality and to evaluate both potential human health and ecological risks. Surface water will be evaluated as a medium of potential concern for the Group IV parcels, if access to CSSC is granted.

4.2.6 Sediment

There are no surface water bodies on the Group III Parcels. Therefore the only sediment relative to the Crawford site is in the CSSC; sediment is not being proposed for investigation in this SSWP addendum.

Previous investigations indicate the possible presence of NAPL in the CSSC sediments. Refer to Figure 20 of the SSWP – Group I (NRT, October 2012). Further investigations are needed to assess sediment quality and to evaluate potential risks to ecological receptors and will be evaluated as a medium of potential concern with the Group IV parcels, if access to CSSC is granted.

4.3 Potential Exposure Pathways – Human Health

This section evaluates potential exposure pathways for human health receptors as presented in the Multi-Site CSM (IBS, August 2007a). An evaluation of the Multi-Site CSM exposure pathways has been considered to develop the CSM specific to Parcels I, J, M, N, and T of the Crawford Station Site. This evaluation considers both current and potential future land use at the Crawford Station Site. The potential human receptors being evaluated under a range of land use scenarios include industrial/commercial workers, construction workers, recreational visitors/trespassers, and residents.

Exposure pathways will be evaluated as part of the risk assessment activities to assess if response actions, including risk management tools, are warranted to manage the potential risk to human health on the Group III parcels of the Crawford Station Site. The methods that will be used to evaluate potentially complete exposure pathways are included in the Multi-Site RAF (Exponent, September 2007).

Exposure to soil, groundwater, and vapors will be evaluated for the upland portion of the site; this includes the Group III parcels. Evaluation of potential exposure was previously discussed by media in Section 4.2 of this SSWP.

While not located within the Group III parcels, the CSSC represents the only water body in close proximity to the Crawford Station Site. The IEPA Secondary Contact and Indigenous Aquatic Life use designation advises limited direct contact with the surface water within the CSSC. IEPA recommends recreational or other water use where contact with the water is limited and the probability of ingesting appreciable quantities of water is minimal. Recommended uses are limited to fishing, commercial and small craft recreational boating (e.g., canoeing and kayaking), and any limited contact incident to shoreline activity such as wading (35 IAC [Illinois Administrative Code] 301.282). A detailed evaluation of the CSSC was not performed as part of the habitat assessment for the Group III parcel area. Based on observations that will be made during a future habitat assessment of the CSSC, the human receptors to be evaluated further will be defined with the baseline risk assessment (BLRA) specific to the CSSC.

4.3.1 Industrial/Commercial Land Use Scenario – Worker

The Multi-Site CSM considered the exposure route to the industrial/commercial worker through incidental ingestion, dermal contact, and inhalation of Group III soil due to either direct exposure to surface soil or subsurface soil due to soil disturbance as follows:

- Incidental ingestion, dermal contact with or inhalation of surface and subsurface soil on Parcels I, J, M, N, and T.
- Inhalation of vapors through VI from soil and groundwater near or underneath selected building(s) (Appendix F). The need for any additional soil vapor sampling at current buildings or to consider future use will be evaluated based on soil and groundwater data to be collected during the RI.

In the risk assessment, existing data and data obtained from proposed sampling on all parcels will be used to evaluate exposures to surface soils by industrial/commercial workers by comparing soil concentrations to the most current regional screening levels (RSL) provided by the USEPA for the industrial worker soil exposure scenario.

In the future, if the subsurface soils were disturbed on the Crawford Station Site, exposure via inhalation, ingestion, and dermal contact may be possible, although industrial/commercial workers would not likely be the workers exposed during the disturbance; rather, construction worker exposure is more likely. Construction worker exposure is discussed in Section 4.3.2. However, in the absence of a soil barrier, paving and/or the building slab, exposure via inhalation, ingestion or dermal contact may exist to an industrial/commercial population; therefore, industrial/commercial worker exposure will be further evaluated in the RI/FS.

Exposure to groundwater by an industrial/commercial worker is not expected because the public water supply is obtained from Lake Michigan. However, the groundwater data will be compared to State and Federal drinking water standards and tap water SLs for informational purposes only.

Currently, the completeness of the exposure pathway for VI is unknown. Based on the current land use (industrial/commercial), the presence of buildings in the vicinity of former MGP structures, and known impacted media, potential inhalation of vapors from VI into buildings will be evaluated at selected buildings under this SSWP (Appendix F). Analysis of additional data that will be obtained from the soil and groundwater samples throughout the Group III study area and exterior soil vapor data at the selected buildings will determine the need for additional soil vapor sampling at buildings located on these parcels. In addition, once the extent of MGP residuals in soil and groundwater are established, the potential for VI due to the presence of impacted soil or groundwater will be evaluated on parcels where no current

buildings are located to assess future use. Soil vapor and groundwater data, when obtained, will be compared to the most current VI SLs published by USEPA to evaluate if there is a potential risk associated with VI into current or future buildings in the study area.

4.3.2 Construction Worker

The Multi-Site CSM considered the potential exposure of the construction worker to impacted soil, groundwater and vapors. Potential exposure of construction workers to soil is through incidental ingestion, dermal contact, and inhalation of soil during soil disturbance. Consistent with the Multi-Site CSM, there is the potential that construction workers may be exposed to soil and soil vapor if portions of the Crawford Station Site are redeveloped or if subsurface utility work occurs. During this redevelopment or utility work, they may also be exposed to perched groundwater.

Potential exposure of the construction worker will be qualitatively addressed in the risk assessment due to the short duration of exposure. The construction worker scenario will be assessed using both previously collected data that meets the required DQOs (as discussed in Section 4.2) and new data to evaluate risks under the following exposures:

- Incidental ingestion, dermal contact or inhalation of soil (as well as chemical vapors) during soil disturbance on the Site parcels with un-remediated soil remaining at depths shallower than 10 ft bgs.
- Inhalation of vapors derived from groundwater associated with excavation activities across the site
- Dermal contact with groundwater in excavations from across the site
- Direct contact with NAPL

4.3.3 Recreational Land Use Scenario – Visitor/Trespasser

The Multi-Site CSM considers that potential exposure to a recreational visitor/trespasser may occur through incidental ingestion and dermal contact of surface soils under future land use scenarios. Under current land use conditions, recreational users would not be exposed to surface or subsurface soils on most of the Crawford Station Site because the land surface is covered by buildings and pavement. In addition, access is restricted by fencing and gates. The potential risks to site visitors/trespassers with respect to upland areas will be addressed qualitatively considering the potential exposure to other receptors that would be expected to have the most exposure to the upland parcels (e.g., industrial/commercial workers or construction worker).

4.3.4 Residential Land Use Scenario

Soil and soil vapor data from all portions of the study area will be screened against the most recent residential soil SLs and VI SLs published by USEPA. This screening will include historic data and newly obtained RI data available for the Crawford Station Site. This screening will provide a perspective on any potential health risk associated with the potential for future residential development of each portion of the study area. However, within the BLRA, parcels will be evaluated for their current use as industrial property. The need to implement risk management tools on the parcels, which may include, but are not limited to, institutional and/or engineering controls, will be evaluated in the FS (see Section 8).

4.4 Potential Exposure Pathways – Ecological Receptors

This section evaluates the potential exposure pathways for ecological receptors as presented in the Multi-Site CSM (IBS, August 2007a). A site-specific evaluation of the Multi-Site CSM exposure pathways has been considered for the Crawford Station Site. The methods used to evaluate the potential exposures to ecological receptors are discussed in the Multi-Site RAF (Exponent, September 2007).

The results of the habitat assessment completed on July 19, 2011 by an Exponent environmental biologist was used throughout this subsection to evaluate which ecological receptors may be exposed to the contaminated media within the Crawford Station Site. Discussion of the habitat assessments is provided in the SSWP, 2011. As discussed previously in Section 4.1, there is no ecological habitat in the upland area because of the developed nature of the Crawford Station Site. This was documented as part of the habitat assessment (Appendix A6) and will also be documented in the ecological risk assessment performed for the Crawford Station Site.

The only potential ecological habitat is along the CSSC, which is not within or adjacent to the Group III parcels and therefore will not be addressed in this SSWP Addendum. As part of the future RI activities, additional reconnaissance activities will be performed of the CSSC and the adjacent riparian area, and the Site-Specific CSM for these areas will be completed at that time. The additional observations that will be made of the CSSC and adjacent riparian area during future RI activities will include the general ecological habitat characteristics, which are more readily observed while performing the sediment investigation (Group IV parcels). These additional observations will be used to update the ecological habitat assessment performed in July 2011.

4.4.1 Mammals (Upland and Aquatic)

Carnivorous, piscivorous, insectivorous, omnivorous, and herbivorous mammals are ecological receptors considered in the Multi-Site CSM that may be exposed to COPCs through incidental ingestion of soil, sediment, or surface water and ingestion of plant and prey items. As noted during the site reconnaissance, there is no upland habitat that would support terrestrial mammals within the Group III parcels of the Crawford Station Site. Other than isolated maintained grass areas on some of the Group III parcels, the Group III parcels are covered with gravel/crushed asphalt, asphalt pavement, or buildings. The maintained grass areas are not natural habitats for terrestrial mammals. Therefore, further ecological evaluation of terrestrial mammals will not be performed as part of the BERA for the area of the Group III parcels.

4.4.2 Birds (Upland and Aquatic)

Carnivorous, piscivorous, insectivorous, omnivorous, and sediment probing birds are ecological receptors considered in the Multi-Site CSM that may be exposed to COPCs through either incidental ingestion or dermal exposure of soil, sediment, or surface water or ingestion of plant and prey items.

Terrestrial bird species were not observed on the Crawford Station Site on the day of the site reconnaissance. There is limited habitat for birds to nest or forage because the upland area is primarily covered with gravel, buildings, and crushed asphalt over the majority of the ground surface. None of the Group III parcels are managed as natural area, and would only provide limited habitat for birds. Therefore, further ecological evaluation of terrestrial bird species will not be performed as part of the BERA for the Group III parcel area of the Crawford Station Site.

4.4.3 Fish

Fish are an ecological receptor considered in the Multi-Site CSM that may be exposed to COPCs through incidental ingestion and dermal exposure of sediment and ingestion of food. There are no surface water bodies within the Group III parcels of the Crawford Station Site. Therefore, further ecological evaluation of fish species will not be performed as part of the BERA for the Group III parcel area of the Crawford Station Site.

4.4.4 Benthic Invertebrates (Aquatic Ecological Receptor)

Benthic invertebrates are considered an ecological receptor in the Multi-Site CSM that may be exposed to COPCs in sediment and surface water adjacent to the Crawford Station Site. There are no surface water

bodies within the Group III parcels of the Crawford Station Site. Therefore, further ecological evaluation of Benthic Invertebrates will not be performed as part of the BERA for the Group III parcel area of the Crawford Station Site.

4.5 RI Data Needs for Group III Parcels

As described in the Completion Report (NRT, December 2011), and previous sections of this SSWP, the media that require further assessment with respect to public health, welfare, or the environment include the following:

- Surface or near surface soil on parcels I, J, M, N, and T is warranted to assess the direct contact exposure pathway.
- Subsurface soils potentially impacted with MGP residuals on parcels I, J, M, N, and T.
- Soil vapor and the VI exposure pathway on Parcels I, J, M, N, and T. After the RI soil, groundwater and initial soil vapor data is collection on Parcel T, the need for additional evaluation of the VI exposure pathway will be assessed.
- Groundwater potentially affected with MGP residuals on Group III Parcels.
- Groundwater and soil vapor potentially affected by preferential migration pathways and buried utility infrastructure.

5 PROJECT SCOPING AND PLANNING ACTIVITIES

As defined in the SOW, the scope of the Crawford Station Site work includes the following tasks:

Task 1: Project Scoping and RI/FS Planning Documents

Task 2: Community Involvement Support and Technical Assistance Plans

Task 3: Site Characterization

Task 4: Remedial Investigation Report (including human health and ecological risk assessments)

Task 5: Treatability Studies (if needed)

Task 6: Development and Screening of Alternatives (Technical Memoranda)

Task 7: Detailed Analysis of Alternatives (FS Report)

Task 8: Progress Reports

5.1 Project Scoping (Task 1)

5.1.1 Multi-Site Documents

The Project Scoping and RI/FS Planning Documents included the creation of multi-site documents that outlined general approaches and concepts with the intent of streamlining preparation of work plans and minimizing review times for future deliverables. In addition, the multi-site documents provide a consistent approach to investigating and assessing former MGP sites for PGL. The multi-site documents that have been prepared and approved by USEPA to achieve these objectives include the following:

- Multi-Site Health and Safety Plan, Rev 2, August 2007 (Multi-Site HASP) (IBS, August 2007b)
- Multi-Site QAPP, Rev 2, September 2007 (IBS, September 2007c)
- Multi-Site Conceptual Site Model, Rev 1, August 2007 (Multi-Site CSM) (IBS, August 2007a)
- Multi-Site Risk Assessment Framework, Rev 0, September 2007 (Multi-Site RAF) (Exponent, September 2007), Multi-Site RAF Addendum –Revision 3 (Exponent, July 2014)
- Multi-Site Field Sampling Plan, Rev 4, September 2008 (Multi-Site FSP) (IBS, September 2008)
- Multi-Site Feasibility Study Support Documents, Rev 1, March, 2010 (Multi-Site FS) (IBS, March 2010)

These multi-site documents are intended to set forth the general approaches and concepts for performing RI/FS activities. Site-specific revisions relevant to these multi-site documents are included in Appendix D.

5.1.2 Project Management Communications

The Site-Specific FSP included in Appendix D3 includes a flow chart of the lines of communication and contact information that will be used during field activities. Additional team members may be added throughout the project duration.

Meetings or teleconferences will be held at least once per week during field activities to provide schedule updates and to discuss problems that may have occurred and resolutions that have been implemented. The frequency of these meetings may be increased depending on the specific activity being performed.

These meetings will include the following personnel:

- USEPA Remedial Project Manager, Mr. Ross del Rosario
- PGL Project Coordinator, Mr. Naren Prasad, P.E., LEED AP
- NRT Project Manager, Ms. Tracy L. Hofmann, PE

5.1.3 Purpose and Data Quality Objectives Review

DQOs for the Crawford Station Site are consistent with the DQOs presented in the Multi-Site QAPP. As discussed in Section 1 of this SSWP, data will be collected during the RI activities to satisfy the following site-specific objectives:

- Evaluate the nature and extent of MGP residuals in surface soil, subsurface soil, groundwater, sediment, surface water, and soil vapor at the Crawford Station Site and assess the characteristics of any residual material, if identified
- Support development and evaluation of potential remedial alternatives (FS), if response actions are necessary
- Collect data to support a BLRA for human health and evaluate the potential risk for human and ecological receptors

5.1.4 Preliminary Objectives for Remedial Action

The objectives for remedial action will be developed as part of the FS tasks described in Section 8.1 of this SSWP. In general, the remedial action objective is to protect public health, welfare, and the environment through risk reduction from MGP impacts.

5.1.5 Preliminary Remedial Action Alternatives

The remedial action alternatives will be developed as part of the FS tasks described in Section 8 of this SSWP and will include site-specific evaluation of Applicable or Relevant and Appropriate Requirements (ARAR) and To Be Considered requirements.

Remedial action alternatives were previously evaluated before selecting the response actions discussed in Section 2.6 of this SSWP. These response actions may again be reviewed and updated to reflect current conditions on the Crawford Station Site. In general, response actions including, but not limited to, one or more of the following may be appropriate to address MGP residuals:

Soil

- Removal and disposal (previous response action)
- In-situ treatment
- Capping and containment
- Institutional controls

Groundwater

- Containment
- Active remediation (in situ or ex situ)
- Monitored natural attenuation (MNA)
- Institutional controls

Surface Water and Sediment

- Dredge/excavate and disposal
- In-situ treatment
- Capping and containment
- MNA

Soil Vapor

- Engineering or institutional controls
- Soil removal and disposal
- Groundwater monitoring or treatment

5.2 Community Relations (Task 2)

PGL is prepared to provide community relations support if requested by the USEPA. In addition, PGL has and will continue communicating with local residents and authorities regarding the remediation efforts conducted in the specific Ward. All activities and communications will be coordinated with the USEPA.

6 SITE CHARACTERIZATION AND ASSESSMENT ACTIVITIES

The scope of RI characterization and assessment activities addressed by this SSWP includes:

- Mobilization planning
- Site surveying and reconnaissance
- Surface and subsurface soil sampling
- Groundwater monitoring well installation
- Groundwater sampling
- Soil vapor sampling

Sediment and surface water sampling will be addressed during the RI performed on subsequent parcel groups.

Sampling locations, frequencies, analytical parameters, and methods are presented below. Specific standard operating procedures (SOP) are referenced from the USEPA-approved Multi-Site FSP and are included in Appendix G. Work preparation, mobilization, site-specific dynamic sampling and analysis techniques, investigation-derived waste management, record keeping, sample analysis and validation, and data evaluation processes are also discussed. Project files will be managed as described in USEPA-approved SOP SAS-01-02 from the Multi-Site FSP.

Planned field activities will be completed in accordance with the methods and techniques described in the Multi-Site QAPP, Multi-Site RAF, and Multi-Site FSP; these general methods and techniques are not repeated herein. Site-specific information relevant to these multi-site documents are discussed below and details are included in Appendix D. The Site-Specific QAPP and HASP are presented in Appendix D1 and D2, respectively. The Site-Specific HASP is as stringent as or more stringent than the Multi-Site HASP and contains all components of the Multi-Site HASP. The Site-Specific HASP replaces the Multi-Site HASP in its entirety.

The Site-Specific FSP is presented in Appendix D3, and the Site-Specific CSM is included in Appendix D4. Copies of the SOPs referenced herein and the Multi-Site FSP are provided in Appendices G and H, respectively.

6.1 Mobilization Planning

Field mobilization activities will be completed in accordance with USEPA-approved SOP SAS-05-01 and Section 3 of the Multi-Site FSP. These activities include the following:

- Arranging access to all parcels (to be addressed by PGL).
- Notifying and locating utilities through DIGGER – Chicago Digger Hotline, the City of Chicago, and if necessary, a private utility locating contractor.
- Establishing clear communication from the field to office personnel, PGL, and the USEPA.
- Work near buried or overhead utilities will only proceed when utilities and reasonable setbacks can be field-verified and safety standards for operations can be maintained.

6.1.1 Daily Planning

Daily planning will occur as described in the Multi-Site FSP and the Site-Specific HASP including, but not limited to, the following:

- Tracking daily progress
- Identifying and resolving problems
- Communicating with office personnel, PGL, and the USEPA as appropriate, to ensure decision points and objectives for the work are fulfilled
- Holding safety meetings

A field log book will be maintained following the procedure outlined in USEPA-approved SOP SAS-01-01 from the Multi-Site FSP.

6.1.2 Demobilization

Generally, demobilization planning will occur during the pre-mobilization planning as staff and subcontractors plan for the field activities. Issues regarding final status of the property will be identified during the planning process (e.g., ensuring that landscaping issues are addressed).

6.1.3 Property Access and Safety

The RI for the Group III parcels is contingent on coordination with and approval by the respective property owners to gain access to conduct the proposed activities. Work will proceed only if it can be performed safely and does not adversely impact ongoing business operations on each property.

6.2 Site Surveying

Existing survey data will be reviewed to the extent it is available and applicable to establish existing conditions at the Crawford Station Site. Supplemental survey data will be completed as appropriate in accordance with USEPA-approved SOP SAS-02-02 and Section 7 of the Multi-Site FSP. Notable features will be accurately located and survey points will be converted to the USEPA-required Universal Transverse Mercator projection. Features from the individual parcels will be compiled into one comprehensive survey.

- Updated survey work and mapping will include the following: Establishing additional location survey information, as appropriate, so that drawings and maps reflect current features
- Establishing new survey control points so future activities and features can be accurately located and tied to a common datum
- Surveying the location and elevation of new borings and monitoring wells
- Surveying subsurface utility infrastructure on the Crawford Station Site that have the potential to affect migration of MGP residuals

Recently, the Cook County Assessor has allowed GIS access to parcel data information. As part of the survey and mapping task, current parcel data has been incorporated for the Group III parcels and will be incorporated into the mapping of the RI Reports for the other parcels.

6.3 Supplemental Site Reconnaissance

Reconnaissance activities have occurred on portions of the Crawford Station Site over the past several years. In accordance with the Multi-Site RAF, additional reconnaissance will be conducted during Group IV and documented to support the Site-Specific CSM developed in Section 4 of this SSWP. Reconnaissance will continue at the Crawford Station Site to evaluate pathway completeness for ecological receptors.

A FOIA request was submitted to IEPA concerning LUST incidents, SRP sites, and other environmental investigations that may have been performed on various parcels within the Crawford Station Site. The

results of these prior investigations will be reviewed as necessary to assist in the interpretation of RI findings as well as the development of future addenda to this SSWP, if appropriate. Refer to Appendix J for received FOIA data from the IEPA for Group III parcels.

6.4 Surface and Subsurface Soil Exploration and Sampling

6.4.1 Overview

Soil sampling strategy involves both overall site and focused areas of investigation. The former MGP structures and historical investigation data were reviewed to determine placement of soil borings. Previous site investigation and response actions are summarized in Sections 2 and 3 of the SSWP – Group I (NRT, October 2012) and Section 1 of SSWP, Add.#2, Rev 1.0). Additional soil exploration and sampling will evaluate the potential presence and extent, if any, of MGP residuals on Group III Parcels I, J, M, N, and T. Collected data will be used in a BLRA and FS. The BLRA will evaluate whether the Crawford Station Site presents a risk to human health and the environment.

The proposed sampling locations for the Group III parcels are shown on Figures 5A through F and 7. In addition, completed sampling locations for the Group I and Group II parcels also are presented on Figures 5A and 7 for the purpose of showing the relationship between the proposed remedial investigations. The historical data is present based on field observations of potential residuals (staining, PID response and presence of NAPL) with the exception of some borings on Parcel M where some are based on analytical data. Table 2 presents a list of all proposed borings, probes, monitoring wells, and sampling locations for Group III parcels (i.e., RI Group I and Group II sampling locations are not listed on Table 2). See the respective Table 2 of the SSWP - Group I (NRT, October 2012) and SSWP - Group II (NRT, January 2014) for the details on the Group I and II RI sampling locations. All sampling locations are pending property access and the feasibility of the proposed locations relative to business operations on each property. If field conditions restrict placement of a proposed boring location, the boring will be executed as close to the proposed location as possible at the discretion of the property representative and field team. Special considerations for boring placement may be required on street right-of-ways where infrastructure may limit intrusive activity.

6.4.2 Soil Sampling Strategy

Soil borings will be advanced to depths of 20 to 25 ft bgs or until 4 ft of native clay is encountered which does not exhibit visual, PID or olfactory evidence of MGP residuals, whichever depth is greater. The sampling strategy and boring depths are summarized on Table 3 and detailed below. Soil samples will be

collected from each soil boring and monitoring well location (prior to conversion to well) as outlined in the following sections, unless otherwise specified in the Sections 6.3 through 6.9.

6.4.2.1 Surface Soil Samples

One surface soil sample will be collected at each boring location from 0-6 inches bgs in areas where there is no ground cover (such as pavement or imported clean fill/gravel). In addition, a second sample will be collected from 6-24 inches bgs at 50% of these surface soil sampling locations.

6.4.2.2 Near-Surface Soil Samples

Where ground cover exists (such as pavement or imported clean fill/gravel) that prevents collection of a surface soil sample at 0-6 inches, a near-surface sample will be collected at 0-6 inches below the cover layer. A second sample from 6-24 inches bgs will NOT be collected at these boring locations.

6.4.2.3 Subsurface Soil Samples

Up to two subsurface soil samples will be collected at each soil boring location between 2 ft bgs and the boring termination depth. Sample selection will be based on the presence/absence of evidence of MGP residuals (e.g. visual or olfactory evidence and/or elevated PID readings) according to the following protocol:

- If <u>no evidence of MGP residuals is present</u> in a boring, one soil sample will be collected as follows:
    1) One sample from the 2-ft interval at the base of the fill unit where, historically, MGP residuals are commonly observed
- If <u>evidence of MGP residuals exists</u> in a boring, two soil samples will be collected as follows:
    1) One sample from the 2-ft interval of most significant, non-NAPL evidence of MGP residuals
    2) One sample from the 2-ft interval below which evidence of MGP residuals is no longer observed

Soil samples will be classified following USEPA-approved SOP SAS-05-02 from the Multi-Site FSP.

6.4.2.4 Contingency Borings

During RI operations, additional borings will be advanced at the discretion of the field team to further delineate the extent of MGP residuals on the Site. Particular attention will be paid to the presence of

potential MGP residuals at the site boundaries. Installation of contingency borings (including those shown on the figures) will be conducted in areas where prior property owner and utility clearance have been obtained, and safety protocols can be maintained.

6.4.3 Parcel Specific Sampling

6.4.3.1 Parcel I

Based on review of surrounding historical data and the location of former MGP structures, four features and/or structures have been identified: the former West Fork Channel, a series of former Tar Storage Tanks, a former Tar Separating Tank and a quenching station. As part of the TCRA, soil borings have been advanced by NRT at Parcel I to investigate the potential for MGP residuals. MGP residuals were observed in soil within the former West Fork Channel as well as in the central portion of Parcel I by the former tar separation tank. The locations of the borings are presented on Figure 5B.

Under this SWPP, for the RI, an additional four borings will be advanced on Parcel I to evaluate the potential presence of MGP residuals on the southern, eastern (two samples), and western boundaries of Parcel I (ISB116, ISB117, ISB118, and ISB119), as shown on Figure 5B. Soil samples will be collected and analyzed in the laboratory in accordance with the SSWP.

In addition, borings will be advanced to install monitoring well nests MWI101/PI101, MWI102/PI102, and MWI/PI103. The borings will be logged and sampled prior to installation of the wells.

A total of six soil borings will be advanced on Parcel I as part of the RI evaluation.

6.4.3.2 Parcel J

As previously discussed, no MGP-related investigations have been conducted and non-MGP related investigation data is unavailable for Parcel J. Eight soil borings (JSB101 through JSB108) will be advanced on Parcel J (Figure 5D). Boring JSB101 will be advanced along the northern boundary of the parcel to observe soils in the vicinity of the former tar tank area on Parcel I and additionally to determine whether future soil vapor sampling is warranted. Boring JSB105 will be advanced along the western boundary of the parcel to delineate the subsurface and to determine whether additional soil vapor sampling is warranted. Borings JSB107 and JSB108 will be advanced to delineate the subsurface in the vicinity of borings on Parcels B and O where DNAPL was observed. Boring JSB106 will be advanced to delineate the subsurface along the southern parcel boundary and to determine whether future soil vapor sampling is warranted. Borings JSB102, JSB103, and JSB104 will be advanced randomly across the

parcel to fill gaps and JSB 109 and JSB110 will be installed near the building to determine whether future soil vapor sampling is warranted. Contingency borings JSB111 through JSB114 will be advanced if nearby boring planned borings show evidence of potential MGP residuals. The contingency boring are for delineation purposes (See table 3).

In addition, borings will be advanced to install monitoring well nests MWJ101/PJ101 and MWJ102/PJ102. MWJ102/PJ102 will be used to determine if soil vapor sampling is warranted. These borings will be logged and sampled prior to the installation of the wells.

A total of 12 soil borings will be advanced on Parcel J.

6.4.3.3 Parcel M

Two separate sampling events occurred on Parcel M; in 1998 and 2013. Laboratory analysis of soil samples collected revealed that constituents in some of the soil samples exceeded IEPA TACO standards of that time and tar-like substances were observed in the soil of SB3 as noted in the text of the report (LFR Levine-Fricke, March 1999, Appendix A5) (Figure 5C).

Fifteen additional soil borings (MSB101 through MSB115) will be advanced on Parcel M as part of the RI. Borings MSB105, MSB106 and MSB107 will be installed around the former Tar Decanting Tank where MGP residual could potentially exist. Borings MSB101, MSB102 and MSB103 will be used to evaluate the northern portion of Parcel M and soils near the former Electrical Substation Building and incidental MGP former structures. Boring MSB104 will be used to evaluation the extent of DNAPL observed in adjacent historic soil boring SB3. Borings MSB108 through MSB115 are scattered to evaluate soil quality around the central, eastern, southern and western portions of the parcel.

In addition, borings for two monitoring well nests (MWM101/PN101 and MWM102/PN102) will be installed to evaluate soil and groundwater quality adjacent to affected soil on Parcel L and along the southern boundary of Parcel M. These borings will be logged and sampled prior to the installation of the wells.

A total of 17 soil borings will be advanced on Parcel M.

6.4.3.4 Parcel N

As previously discussed, no MGP-related investigations have been conducted and non-MGP related investigation data is unavailable. Six borings will be advanced in Parcel N (NSB101 through NSB106) to evaluate the subsurface (Figure 5E). Borings NSB101, NSB102, NSB103, and NSB104 will be advanced

on northern half of the parcel. Borings NSB105 and NSB106 will be used to evaluate soil quality on the eastern edge of the parcel and the potential for VI issues near the parcel buildings.

In addition, two borings will be advanced to install monitoring well nest MWN101/PN101 and MWN102/PN102 to evaluate soil and groundwater quality of the parcel. These borings will be logged and sampled prior to the installation of the wells.

A total of eight soil borings will be advanced on Parcel N for the RI.

6.4.3.5 Parcel T

There are no known soil or groundwater investigations available for this parcel. Twelve soil borings will be advanced on Parcel T (TSB101 through TSB115) to evaluate the subsurface (Figure 5F). Borings TSB102, TSB103, and TSB104 will be placed within and around the former Gas Holder on Parcel T. Borings TSB101, TSB105-TSB110, TSB112, and TSB115 will be installed throughout the parcel to evaluate soil quality near incidental former MGP structures and assess the potential for VI near parcel buildings. Boring TSB111 will be used to evaluate soil near the historical Main Transformer Station. Borings TSB113 and TSB114 will be used to evaluate historical MGP conveyance pathway (pipelines and conveyor belts) on the parcel.

In addition, three borings will be advanced to install monitoring well nests MWT101/PT101, MWT102/PT102, MWT103/PT103, and MWT104/PT104. Boring MWT101/PT101 will be used to evaluate soil and groundwater near the former Gas Holder and north edge of parcel; boring MWT102/PT102 will be used to evaluate soil and groundwater near the former Butane/Oil Tanks; boring MWT103/PT103 will be used to evaluate soil and groundwater near the southwest parcel boundary; and boring MWT104/PT104 will be used to evaluate soil and groundwater in the southern portion of the parcel. These borings will be logged and sampled prior to the installation of the wells.

Because a building is located over the former Gas Holder on Parcel T, vapor probes will be installed at the perimeter of the building in the area of the former Gas Holder. The number of probes to be installed will depend on site conditions; a minimum of three and up to seven additional soil borings (TSV101 through TSV107) may be completed around the building to facilitate installation of these probes (refer to Section 6.6). If selected installation techniques allow, these borings will be logged and sampled prior to the installation of the probes.

A minimum total of 18 soil borings will be advanced on Parcel T for the RI.

6.4.4 Sampling Methods and Abandonment

Drilling methods and procedures are described in the Multi-Site QAPP and Multi-Site FSP. Proposed subsurface soil samples will be collected via hollow-stem auger (HSA) borings or direct-push methods. Soil samples will also be collected as part of a groundwater monitoring well installation and soil vapor probe installation, if warranted by field conditions, as discussed in more detail in Sections 6.5 and 6.6. Sample depths within each boring will be identified and recorded in accordance with USEPA-approved SOP SAS-03-03 from the Multi-Site FSP.

Test pits may be excavated or exploratory borings installed to depths necessary to expose utility infrastructure backfill. Soil and/or groundwater grab samples will be collected if there is visual, PID, or olfactory evidence of affected conditions. The test pits or exploratory borings, if performed, will be in accordance with USEPA-approved SOPs SAS-05-06 and SAS-05-07 from the Multi-Site FSP.

Field equipment will be calibrated prior to use as required by USEPA-approved SOP SAS-02-01 from the Multi-Site FSP. During drilling, soil borings will be continuously field-screened to document subsurface conditions and identify samples for laboratory analysis according to USEPA-approved SOP SAS-06-01 from the Multi-Site FSP. Field screening will occur in accordance with the methods and screening techniques identified in the Multi-Site FSP. Borehole logging guidance developed specifically for MGP investigations will be used to assist the field team in describing tar in borings and is included in Appendix I. Observations or field-screening results suggesting that the soil is impacted by a potentially unrelated source will be noted on the drilling logs.

Grab samples will be collected for PVOC analysis using Encore samplers, or equivalent method, at the depth interval exhibiting the highest PID reading or as otherwise documented in the field. QC samples will be collected with the frequency described in Table 2 and required by USEPA-approved SOP SAS-04-03 from the Multi-Site FSP.

Samples will be labeled and packaged in accordance with USEPA-approved SOP SAS-03-01 from the Multi-Site FSP and shipped via overnight courier using chain-of-custody procedures described in USEPA-approved SOP SAS-03-02 from the Multi-Site FSP. Equipment will be decontaminated after use in accordance with USEPA-approved SOP SAS-04-04 from the Multi-Site FSP.

If soil borings are advanced to install a well and the borehole has to be offset due to refusal, or if for any reason the boring is not converted to a well, the original soil boring will be abandoned in accordance with the methods described in USEPA-approved SOP SAS-05-05 and Section 4 of the Multi-Site FSP.

6.4.5 Soil Sample Analysis

6.4.5.1 Chemical Samples

Soil samples will be collected and analyzed for the parameters listed on Table 1 and Table 2 following the corresponding analytical methods. This list will be carried through each Group III sampling event until/unless the COPC list (Appendix C) is revised, based on continuing evaluation of previous sampling results.

6.4.5.2 Geotechnical Samples

One geotechnical sample per parcel will be collected... The sample will be collected above the water table and analyzed for the parameters listed on Table 2. One geotechnical sample of fill materials will be collected from a soil vapor probe location, as discussed in Section 6.6.1.

6.5 Groundwater Evaluation

A Site-Wide Groundwater Monitoring Program (GMP) will be completed throughout each phase of the RI. The GMP will consist of a baseline sampling event of existing wells (i.e. those wells meeting the well construction requirements per Section 6.5.1) and newly installed wells on Group I parcels. Figure 7 presents the current monitoring well network, used in the initial baseline sampling event, along with the approved Group II and proposed Group III well locations. As each phase of the RI proceeds (i.e., field activities on Group II, Group III and Group IV), the current monitoring well network will be enhanced by adding new wells to the monitoring network. At a minimum, groundwater samples will be collected quarterly for one year for each well following its installation. Upon completion of one year worth of data, the GMP will be evaluated to determine if modifications are necessary. This evaluation is discussed in Section 6.5.10.

6.5.1 Baseline Well Assessment

A baseline well assessment was completed in 2012 to identify previously existing wells suitable for long-term use at the site. See SSWP – Group I (NRT, October 2012), Section 6.5, for a summary of the baseline well assessment performed of previously installed monitoring wells on PGL-owned parcels in June 2012. The suitable wells are incorporated into the Site –Wide GMP and the unsuitable wells were or will be abandoned. Details of the any well abandonment to date will be presented in the RI Report for Group I Parcels.

6.5.2 Well Locations

The site-wide groundwater monitoring network is presented on Figure 7. Group III RI proposed well locations are presented on Figure 7 along with previously existing wells, recently installed Group I RI wells (early 2014), and Group II RI proposed well locations (to be installed in late 2014). The proposed Group III wells will supplement groundwater flow and quality within the fill and silty clay units and provide vertical elevation control points relative to other wells in the monitoring network. Table 3 lists the proposed Group III well locations by parcel and the rationale for each well installation is provided.

6.5.3 Monitoring Well Installation

Proposed monitoring wells will consist of a nest of two wells; a water table well installed in the fill and a piezometer installed in the silty clay unit. The nested wells will enable definition of groundwater flow horizontally and vertically at the Crawford Station Site as well as establish the vertical extent of MGP residuals groundwater and provide information for VI assessment. The installation of the well nests will follow the Well Nest Installation Decision Tree described in Table 4.

6.5.3.1 Water Table Wells

With sufficient fill thickness, water table wells will terminate within the fill to assess the presence of perched groundwater and flow direction. Because the presence of perched groundwater may be seasonal, water table wells will be installed regardless of whether groundwater is observed in the borehole at the time of well installation. No soil samples will be collected from water table borings where a nested piezometer is also proposed. If no nested piezometer is proposed at the location, soil samples will be collected from the water table well boring consistent with procedures described in Section 6.4.2.

Water table wells will be screened such that the well screen intersects the water table and does not penetrate the native clay unit. If the fill thickness is less than 13 ft, the well screen length will be decreased so at least three ft of casing will be below the ground surface to provide an effective surface seal. Well screen lengths of 3 ft (minimum), 5 ft or 10 ft (maximum) will be used and selected, based on the depth to the silty clay unit and saturated thickness of the fill. If the fill is less than 6 ft thick, no water table well will be installed.

The water table wells will be installed in accordance with USEPA-approved SOP SAS-05-03 from the Multi-Site FSP and will be constructed of 2-inch diameter Schedule 40 polyvinyl chloride (PVC) with flush mount covers.

6.5.3.2 Piezometers

6.5.3.2.1 Standard Installation

Piezometers will be installed to a target depth of approximately 17 ft below the top of the clay unit to enable a sealed interval of at least 5 ft between the base of the fill unit and the top of the piezometer screen filter pack. The piezometers will be installed in accordance with USEPA-approved SOP SAS-05-03 from the Multi-Site FSP and will be constructed of 2-inch diameter Schedule 40 PVC with a 10-ft screen length and flush mount covers. Due to the expected low permeability clay unit, the 10-ft screen length is specified for this work to facilitate the collection of groundwater samples. Soil samples will be collected from the piezometer borings consistent with procedures described in Section 6.4.2.

6.5.3.2.2 Installing Double-Cased Well

If MGP residuals are encountered in the fill or at the interface of the fill and silty clay units, drilling procedures will be implemented that will minimize the potential for cross-contamination of piezometer installations in the silty clay unit. Double-cased wells shall be constructed when there is reason to believe that cross-contamination may occur by dragging MGP residuals on drilling equipment downward into deeper strata.

A pilot borehole shall be bored through the contaminated fill zone into the silty clay unit. The borehole and outer casing shall extend beyond the zone where there is evidence of residuals into the silty clay by a minimum of five ft. An outer casing (sometimes called surface or pilot casing) shall then be placed into the borehole and sealed with grout. The borehole shall be of sufficient size to contain the outer casing and the 2-inch minimum outer annular space. The size of the outer casing shall also be of sufficient diameter to contain the inner casing and the 2-inch minimum annular space for installing the monitoring well.

The outer casing shall be pressure grouted by the tremie method or similar process to within 2 ft of the ground surface. The grout shall be pumped into the annular space between the outer casing and the borehole wall by placing the tremie tube in the annular space and pumping the grout from the bottom of the borehole to the surface, or placing a grout shoe or plug inside the casing at the bottom of the borehole and pumping the grout through the bottom grout plug and up the annular space on the outside of the casing. If the outer casing is set into tight clay, both of the above methods may be used as the clay usually forms a tight seal in the bottom and around the outside of the casing preventing grout from flowing freely during injection.

The grout mixture used to seal the outer annular space can be neat cement, cement/bentonite, or cement/sand. However, the seal or plug at the bottom of the borehole and outer casing shall consist of a Type I Portland cement/bentonite or cement/sand mixture. A minimum of 24 hours shall be allowed for the grout plug to cure before attempting to drill through it.

When drilling through the seal to install the piezometer, care shall be taken to avoid cracking, shattering, and/or washing out the seal. Removal of outer casings following well construction is not acceptable. Trying to remove outer surface casings after the inner casings have been grouted may jeopardize the structural integrity of the well.

6.5.4 Groundwater Monitoring Well Development

The installed monitoring wells will be developed following installation in accordance with the bailing and pumping methods described in USEPA-approved SOP SAS-05-04 and Section 4 of the Multi-Site FSP. Monitoring well development will continue until field parameters stabilize and at least five well volumes of water have been removed in accordance with USEPA-approved SOP SAS-08-03 from the Multi-Site FSP. If liquids are introduced into the borehole during drilling or well construction activities, an additional volume of water equal to three times the amount added will be removed from the well. Purge water from well development activities is anticipated to be sampled and disposed of at a permitted off-site treatment facility or treated through the current onsite groundwater treatment system. Approval will include any necessary compliance with the Off-Site Rule (OSR), 40 CFR 300.440 (USEPA, September 1993).

6.5.5 Groundwater Sampling

6.5.5.1 Standard Procedures

Low-flow groundwater sampling will be completed for all wells using a peristaltic pump as described in USEPA-approved SOP SAS-08-02 and Section 4 of the Multi Site FSP, provided the depth to water after sampling does not exceed 15 ft. If water depths exceed 15 ft after sampling, regardless of stability, subsequent low-flow sampling events will be conducted using a submersible pump.

Field parameters will also be recorded during well purging including pH, temperature, turbidity, dissolved oxygen, oxidation/reduction potential, and conductivity. Field parameters will be measured as described in USEPA-approved SOP SAS-08-02.

USEPA sample identification protocol and sampling forms will be used to ensure that samples are tracked accordingly and that the laboratory analytical data are provided in a manner consistent with the USEPA database requirements.

It is unknown if perched groundwater will be encountered in sufficient quantity within the fill to enable sampling at all proposed locations. Therefore, some events may have a reduced number of wells sampled.

Wells will be inspected for integrity at each sampling event according to USEPA-approved SOP SAS-08-05. In addition, the field measurements of total well depth will be compared to the monitoring well logs annually to detect potential issues with sediment accumulation in the well.

Groundwater sampling and analysis details are shown on Table 2.

6.5.5.2 Sampling Wells with Slow Recharge Rates

Following the criteria outlined in the Well Nest Installation Decision Tree (Table 4), piezometers will typically be installed into the native clay. Field observations recorded during previous well development and sampling activities at the Crawford MGP Site indicate that some of the existing piezometers exhibit slow recharge rates due to the low permeability of the native clay. In some cases during quarterly sampling events, piezometers have not produced a sufficient volume of water within 24 hours of purging to fill sample bottles required for analysis of all groundwater COPCs described in the SSWP. For wells that cannot be continuously purged and sampled within reasonable time constraints, alternate approaches appropriate to slow recharging conditions will be considered.

Well construction logs, field notes and purge logs generated during previous sampling or development of wells will be reviewed to assist in the selection of the most appropriate sampling method. Wells that produce sufficient water should be sampled as in Section 6.5.51, after continuous purging until field parameters stabilize, in a manner consistent with the SSWP and the Multi-Site SAS-08 Series SOPs: Groundwater Sampling and Measurement Procedures. If standard purging and sampling procedures would not yield adequate well volume and the well is determined to be a slow-recharging well, the following options will be considered:

- Option 1 - If the well will produce sufficient water volume, one well volume will be removed and sample acquisition completed as soon as adequate volume has recovered. To the extent practicable, sampling of these wells will be scheduled so that they can be purged and sampled in the same day. The use of bailers that may increase sample disruption will be avoided. Standard sample volumes will be collected as required by lab within 24 hours of purging as per Table 2.

- Option 2 - If sufficient volume of water is not available to acquire standard sample volumes within 24 hours of purging per Option 1, purge techniques will be utilized that minimize drawdown, purge volume and sampling time. Samples will be collected as follows:
    - Tubing/pumps will be utilized that enable sample withdrawal near the base of the well without increasing turbidity
    - A purge volume will be established that considers the existing volume of water in the well, sample volume needed, well recovery rate and an appropriate level of effort to secure the sample. In some instances, this may result in no removal of water from a well prior to sampling.
    - Groundwater sample volumes will be reduced, if necessary, in order of importance as follows:

Analytes	**Method**	**Minimum Sample Volume**
VOCs	EPA Method 8260	One 40 mL vial
Metals	EPA Method 6010/6020	60 mL

    - Sample volumes should not be reduced as a matter of routine convenience. However, sample volumes can and should be reduced if the alternative action is to eliminate some analytes because insufficient sample volume is available.
    - In order to reduce sample volumes, samples from all monitoring wells will be analyzed for PAHs by the low-volume (aka high-volume injection) method, EPA Methods 3510/8270 SIM. This analytical method requires 100 ml of sample compared to 1 liter required by EPA Method 8270 and achieves the same detection levels as EPA Method 8270.

Pace Analytical Services, Inc. (Pace), or TestAmerica labs will be used for analysis of PAHs unless or until approval is obtained to use additional labs for this analysis. Both Pace and TestAmerica labs are approved for use in the Multi-Site Program as documented in the Multi-Site QAPP, Revision 2 (NRT, 2008). Additional information for both labs regarding use of EPA Methods 3510/8270 SIM was submitted to USEPA in August 2014 (NRT, August 2014)

Standard procedures presented in Section 6.5.5.1 that apply to wells with slow recharge rates, despite longer recharge times and potentially lower sample volumes, will also be implemented.

6.5.6 Groundwater Level Measurements

Groundwater elevations will be documented to assess the direction of groundwater flow whenever the monitoring wells are sampled or as needed to assess flow conditions. Water level measurements will be collected from all monitoring wells regardless of whether the particular location is being sampled. Elevation measurements will be collected after wells are allowed to equilibrate after development and

prior to purging before sampling. Thickness of NAPL, if present, will be measured concurrent to gauging of the monitoring wells. The measurements will be completed throughout the well network within the first 12 hours of a sampling event in accordance with the methods described in USEPA-approved SOP SAS-08-01, SAS-08-04 and Section 4 of the Multi-Site FSP. Observations regarding the presence of MGP residuals within a well will be recorded on the same forms as the water level measurements.

In the previous SSWP, a staff gauge or vertical benchmark on the CSSC was proposed to be installed during the Group I RI to correlate surface water elevation on the CSSC to the measured groundwater elevations within on-site monitoring wells. Optionally, if a staff gauge isn't installed, the canal surface elevation and measurement of surface water levels would be conducted concurrently. Direct measurement of the surface water was completed during the first two groundwater sampling events. However, at present MWRD has declined further access to the CSSC from its property (Parcel S) and WEC Energy Group does not have access to the canal to conduct further surface water gauging. Access discussions between IBS and MWRD will continue and USEPA will be notified when access is granted.

6.5.7 Sampling Schedule and Parameters

The baseline sampling event has been completed along with the first quarterly sampling event on the existing and Group I wells. The data will be provided in the Group I RI Report.

Groundwater monitoring for wells installed during the RI on the Group III parcels will be initiated on a quarterly basis for four sampling events following the well installation. The proposed sampling locations including existing wells and proposed new wells are presented on Figure 7. Groundwater samples will be collected and analyzed for the parameters listed on Table 2 following the corresponding analytical methods, until/unless the COPC list is revised, based on continuing evaluation of previous sampling results. The RI Report for the Group III parcels will be prepared after four quarterly rounds of groundwater data are collected from the yielding wells with supplemental data added later. The estimated project schedule for the well installations and quarterly sampling is shown on Figure 8.

Groundwater flow, quality and aquifer characteristics will be continually evaluated on a site-wide basis as each set of wells specific to a group of parcels are installed and evaluated. When a groundwater monitoring program has been developed (i.e. all wells installed), continued groundwater sampling will be completed for the following reasons:

- To detect changes in environmental conditions (e.g., hydrogeologic or chemical) that may result in a potential exposure risk
- To identify potentially toxic or mobile transformation products

- To assess the presence and stability of any plumes as well as groundwater concentration trends
- To assess the need to revise the COPC list
- To detect new releases of constituents to the environment that could affect potential remedial action alternatives (e.g., MNA or institutional controls)

The monitoring schedule will be continuously reviewed and updated, as appropriate. COPCs may be dropped from the list of analytical parameters for a well after they appear in concentrations less than drinking water SLs for two consecutive sampling events with specific agreement and approval from the USEPA. Samples will be analyzed in a fixed-base laboratory as described in the Multi-Site QAPP and the Multi-Site FSP.

6.5.8 Aquifer Characterization

Single well aquifer tests in the form of slug tests will be conducted to characterize hydraulic conductivity in accordance with the methods described in USEPA-approved SOP SAS-08-04 and Section 4 of the Multi-Site FSP. Aquifer tests will be performed in all piezometers installed within the clay unit. One-half of the water table wells within the surficial fill unit will be selected for slug testing.

6.5.9 Monitoring Well Abandonment

If any of the wells in the monitoring network require abandonment, these activities will be completed in accordance with the methods described in USEPA-approved SOP SAS-05-05 and Section 4 of the Multi-Site FSP.

6.5.10 On-Going Groundwater Monitoring

The GMP and the site-wide well network will be evaluated with the USEPA after completing at least one year of sampling. Concurrently, Group III parcels will be evaluated upon completion of four quarters of groundwater sampling. The RI Report on the Group III parcels will provide a plan for continued groundwater monitoring between the timeframe of the report issuance and implementation of remedial action. Post-RI report activities may include continued monitoring, reporting, and evaluating trends in groundwater quality.

In addition, the groundwater COPC list may be re-evaluated after the first and second rounds of sampling of the Site-Wide GMP. Modification of the COPC list may be warranted based on results of initial soil and groundwater sampling; COPCs may be dropped from the list of analytical parameters for a well after they

appear in concentrations less than drinking water SLs for two consecutive sampling events with specific agreement and approval from USEPA. See further discussion concerning the groundwater COPC list in Appendix C.

6.6 Soil Vapor Evaluation

No soil vapor investigations have been conducted on the Crawford Station Site and historic MGP structures are known to have been located within and/or around current building footprints. Appendix F describes a multiple lines of evidence evaluation for the potential for VI on the Crawford Station Site, based on building placement, position of historic MGP structures, available soil and groundwater data, USEPA's *Office of Waste Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), EPA530-D-02-004* (USEPA, November 2002), guidance provided by USEPA during a meeting on December 17, 2010, and subsequent discussion with USEPA and comments from USEPA regarding the Multi-Site approach to VI. Since the submittal of the SSWP Add.#2, Rev0, the final USEPA VI guidance, *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathways from the Subsurface Vapor Sources to Indoor Air. June 2015,* OSWER Publication 9200.2-154 (herein referred to as the Final VI Technical Guide) has been released. Review of the final guidance, does not suggest a change in the planned VI evaluation, however, the planning VI assessment presented in Appendix F has been reviewed and revised to be consistent with the Final VI Technical Guide. The revised detailed assessment of VI at the Group III parcels is presented in Appendix F.

Parcels I and M are vacant and RI soil and groundwater sampling is proposed. When the RI groundwater and soil data are available, an additional evaluation will be performed to assess VI for future land use scenarios.

There are approximately 15 buildings located on Parcels J, N, and T. These buildings house a variety of operations and occupants. Several buildings on Parcel T are located near MGP structures that would be most expected to pose a VI issue (such as a gas holder). One building on Parcel T is over a former MGP structures (Figure 5A and 5F). No soil or groundwater data exist for these parcels; therefore there is no evidence that there is any MGP-related source of vapors. In addition, construction and complete occupancy information for these buildings is unknown at this time, but will be observed and noted during the sampling events. Soil borings and monitoring wells are proposed near several of these buildings to further evaluate the presence of MGP COPCs in soil and groundwater and the potential for VI at these buildings.

Site access is currently being negotiated. As stated in Appendix F, if the inability to access the property indicates that modifications to the VI sampling plan may be appropriate, an alternative plan will be developed. As agreed upon with USEPA on May 3, 2012, an example of an alternative VI plan may be to forego interior (subslab or indoor air) sampling at a building where property access issues prohibit timely implementation of the VI sampling plan. Instead, alternative sampling locations (e.g. exterior soil gas) will be selected that are agreeable to the property owner and provide alternative lines of evidence related to VI in the building. With the additional lines of evidence, the potential for VI at the building will then be further evaluated. Alternative plans will be reviewed with USEPA prior to implementation.

As indicated in Appendix D4, in some instances, the building footprint and parking lot areas may both be located over the source material such that a soil gas probe outside the building in the parking lot may mimic the sub-slab soil vapor sample. This is the case with the building on Parcel T that is over the gas holder. The ultimate decision of whether to collect exterior or sub-slab soil vapor samples will be influenced by the location of residual source materials. At this time, site access has not been granted to Parcel T or the building over the former gas holder and the depth of groundwater and the building construction details and HVAC system is unknown. The location of residual source material, the presence of areas of elevated chemical concentrations in groundwater, building construction, occupancy, and usage information, and property access issues will be factored into the decision of whether soil gas samples will be collected externally to the building or sub-slab within the building along with accessibility issues of the property owner. To expedite vapor intrusion assessments, at this time, exterior soil vapor probes are proposed on Parcel T (TSV101-TSV103) to evaluate soil vapor near a building located over historic MGP features. Five contingency subslab and exterior soil gas probes (TSV104 through TSV108) are planned, if evaluation of the first three boring results warrants further lines of vapor intrusion evidence or extent of VI. When additional building information and RI data are available, an additional VI evaluation will be performed to determine if additional soil vapor samples should be collected. Contingency borings are shown on the figure within the building footprint to address this uncertainty.

Two rounds of sampling will be conducted in alternate seasons for any given sampling location (soil vapor, subslab vapor, or indoor air) to verify sampling results before a no further action decision can be made regarding the VI assessment.

VI evaluation for reasonable future land use scenarios, potentially impacted utility corridors, and any additional buildings of concern identified following analysis of the current RI sampling plan will be conducted after results of the proposed sampling are received. Data evaluation for the current scope of the RI will include consideration of the need for additional VI evaluation.

6.6.1 Soil Sampling During Vapor Probe Installation

During soil vapor probe installation, up to two subsurface soil samples may be collected from proposed borings for chemical analysis. Subsurface soil samples for chemical analysis will be collected between 2 ft bgs and the termination depth (one ft above the water table). Selection of subsurface soil samples will be based on visual observations and/or elevated PID readings. If no evidence of impacts is present in a boring, a sample will be collected from the 2-4 ft bgs interval. Samples will be classified following USEPA-approved SOP SAS-05-02 from the Multi-Site FSP. If subslab and soil vapor probes are installed using a hammer drill and drive rods such that the soil cannot be logged or sampled during installation, then soil samples will not be collected at that location.

One geotechnical sample will be collected from one soil vapor probe boring location and tested for grain size distribution, moisture content, bulk density, and specific gravity in accordance with Table 2. Samples will be selected to represent the soil in the area of the probes; if more than one soil type is identified in the area of the vapor probes, additional geotechnical samples may be submitted. If soil vapor probes are installed using a hammer drill and drive rods because sampling locations are not accessible by a direct-push rig and such that the soil cannot be logged or sampled during installation, geotechnical samples will be collected from nearby locations that are likely to represent soil where the probes are installed.

6.6.2 Exterior Soil Vapor Probe Installation and Sampling

Exterior soil vapor probes will be installed and sampled per the procedures outlined in USEPA-approved SOP SAS-11-06 (Appendix G). At each proposed exterior soil vapor sampling location, one or more nested probes will be installed, based on the depth to the water table as follows:

- One probe will be installed in the soil column at a minimum of 5 ft bgs (the top of the screen will be set no shallower than 5 ft bgs). False negative results for soil gas samples collected from areas not underneath a building or other impermeable cover (e.g. parking lot concrete or asphalt) are possible in soils shallower than 5 feet bgs. If the depth to the water table is less than 9 ft bgs, only one probe will be installed.

- A second soil vapor probe will be installed such that the bottom of the screen is approximately 1 ft above the water table if the depth to groundwater is 9 ft bgs or greater.

- At the discretion of the field team, if the unsaturated zone is greater than 9 ft, a third probe may be installed midway between the shallow probe and the probe located above the water table. For adding a third probe, a minimum of three vertical ft between screens is suggested.

The USEPA-approved SOP for soil gas sampling for the Multi-Site Program (SOP SAS-11-06) states that probes will be installed no shallower than two ft bgs. Using a 2-ft minimum depth, an exception to the 5 ft minimum depth stated above, is possible if:

- An impermeable cover (e.g. parking lot concrete or asphalt) overlies the ground at soil gas sampling locations. At these locations, the risk of false negatives is less and shallower probes can be installed.
- Site-specific circumstances (e.g. a very shallow water table) compel the collection of soil gas samples at depths of less than 5 ft bgs. If this occurs, the reason why the shallow samples were collected will be explained and the data will be considered and evaluated separately in the risk assessment.

Installing nested probes at multiple depth intervals will allow evaluation of vertical attenuation over distance. For nested probes at varying depths, the probes will be installed in the same borehole and the hole then packed with sand and bentonite per USEPA-approved SOP SAS-11-06. Probes driven into the ground using rods cannot be nested in this way and will instead be nested in separate holes in close proximity. Soil vapor probe nests will be identified as [*Parcel Letter*]SV#S (shallow), [*Parcel Letter*]SV#D (deep) or [*Parcel Letter*]SV#M (mid-depth).

Soil vapor samples will be collected in a 1- or 6-liter Summa™ canister connected to a flow regulator, per USEPA-approved SOP SAS-11-06. The sample canister will be labeled with the sample name, date and time of collection. The canister label information plus the canister and flow controller serial numbers, and the final vacuum gauge reading will be recorded on the chain-of-custody. Samples will not be chilled or subjected to extreme temperature or pressure fluctuations. Samples will be shipped for analysis of soil vapor COPCs (Tables 1 and 2) by USEPA Method TO-15, and for O_2, CO_2, and methane by American Standard Test Method (ASTM) Method 1946 (ASTM International, 2010) or USEPA Method 3C.

6.6.3 Subslab Vapor Probe Installation and Sampling

Subslab vapor probes are not initially proposed for the RI on the Group III parcels. Additional VI assessment will be performed when additional building information and soil vapor, groundwater and soil data are obtained to determine the whether subslab vapor probes are warranted. If warranted, subslab vapor probes will be installed and sampled per the procedures outlined in USEPA-approved SOP SAS-11-01 (Appendix G). At each proposed subslab vapor sampling location, at least two nested probes will be installed, unless the slab is estimated to be less than 2.5 ft above the water table. One probe will be installed in the soil column directly (approximately one ft) above the water table. This will provide an estimate of volatilization at the water table. The other probe will be installed just below the building slab to provide an estimate of soil vapor concentrations beneath the slab. If the unsaturated zone is sufficiently

thick (greater than 8 ft), a third probe may be installed midway between the other two probes. Installing nested probes at multiple depth intervals will allow evaluation of vertical attenuation over distance. Soil vapor probes nests will be identified as [*Parcel Letter*]SV#SS (subslab shallow) and [*Parcel Letter*]SV#SD (subslab deep).

Subslab vapor sample collection, labeling, handling and shipping will proceed as described in Section 6.6.1 for exterior soil vapor sampling.

6.6.4 Sump Headspace Sampling

Sump headspace samples will be collected in buildings where sumps are present that provide a preferential pathway for affected groundwater or soil vapor to enter the building. At the selected sump, one vapor grab sample will be collected. Prior to sample collection, the sump will be sealed off except for a sampling port that will allow the vapor sample to be withdrawn from the headspace after the sump is sealed off. Sump headspace samples will be identified as [*Parcel Letter*]SG#HS.

Prior to sample collection, an indoor air sampling survey will be conducted of the building interior to document the presence of any chemicals or materials that may contribute to background concentrations of COPCs in the sampling area.

Sampling can commence after the sump seal has cured for 24 hours. Sample location information, and meteorological conditions (e.g., temperature, barometric pressure, wind speed/direction, and relative humidity) will be recorded on a Field Data Air Sampling Form. Meteorological data will be obtained online from the nearest National Weather Service monitoring station. Sample collection, labeling, handling and shipping will proceed as described in Section 6.6.1 for exterior soil vapor sampling.

6.7 Disposal of Investigation-Derived Waste

Investigative wastes will be placed in containers during field investigation activities in anticipation of off-site disposal. Confirmation that the disposal facilities meet the requirements of the OSR (USEPA, September 1993) for the disposal of investigation-derived waste will occur prior to undertaking any disposal activities.

Representative samples for disposal purposes will be obtained and provided as required by the disposal authority through which the wastes will be managed and disposed. A composite sample of soil will be prepared for waste characterization by collecting material from soil cuttings. Representative groundwater and decontamination water samples will also be prepared for waste characterization if off-site disposal is

planned. The groundwater, decontamination water and composite soil samples will be sent to a fixed-based analytical laboratory for analysis of waste disposal parameters that will be specified by the landfill or in the case of the water, the treatment facility. All disposal activities will be completed in accordance with applicable state and federal regulations and the methods described in Section 9 of the Multi-Site FSP (Appendix H).

6.8 Record Keeping

Details of field and laboratory records and data management and storage are provided in the USEPA-approved Multi-Site QAPP, Multi-Site FSP, and SOP SAS-01-02.

6.9 Sample Analysis and Validation

Laboratories selected to perform analysis of chemical samples of soil, groundwater, soil vapor, surface water, and sediment will be fixed based facilities. Selected laboratories will be approved for the media of concern and COPCs in the Multi-Site QAPP. Reporting and detection limits for the labs will be verified prior to sample collection to ensure that the laboratory limits meet the current SLs for the Multi-Site MGP Program.

Table 2 summarizes the proposed sampling and analysis plan for the Crawford Station Site and includes samples to satisfy quality assurance/QC (QA/QC) requirements in accordance with Section 2 of the Multi-Site QAPP and USEPA-approved SOP SAS-04-03 from the Multi-Site FSP. As described in Section 6 of this SSWP, the dynamic work plan approach will be used and additional samples (including QA/QC samples) may be collected.

Laboratory procedures, field measurements, and sample results will be verified and/or validated as discussed in the Section 4 of the Multi-Site QAPP.

6.10 Data Evaluation and Tabulation for Risk Assessment

Verified and/or validated data will be entered into a database and tabulated for use as described in the Multi-Site QAPP. Procedures for assessing the precision, accuracy, representativeness, completeness, and comparability of field and analytical laboratory data are described in Section 4 of the Multi-Site QAPP and USEPA-approved SOPs SAS-04-01, SAS-04-02, and SAS-04-03 from the Multi-Site FSP. Data will be evaluated to assess if the DQOs identified in the Multi-Site QAPP have been met.

Analytical results will be organized in a logical manner such as by sample location number, sample type, or sample area. Analytical tables will indicate the unique sample identification number corresponding to the sample/location/well name, sampling date and time, sample depth, detection limits, analytical results (following the units of measurement presented in the Multi-Site QAPP Table 9), and validation qualifiers, if appropriate. Data may be presented in summary tables, graphs, or as plan or cross-sectional views with COPC concentrations, as determined necessary.

Data sets may be created for each medium and may include summary statistics such as detection frequency, arithmetic mean concentration, maximum detected concentration, standard deviation, and/or 95% upper confidence limit of the mean.

7 REMEDIAL INVESTIGATION REPORT

Data collected during the RI activities will be included in a RI Report in general accordance with the USEPA RI/FS guidance document (USEPA, October 1988). An RI Report will be prepared at the conclusion of the activities performed per the SSWP on each parcel group. The RI Report will include the following information and documentation, as appropriate, in accordance with Task 4 of the SOW attached to the AOC:

- A description of field procedures and methods used during the RI.
- A discussion of the nature and rationale for any significant variances from the scope of work described in this RI/FS SSWP.
- The data obtained during the RI and previously collected data of useable quality. This will include analytical data, field measurements, etc. To the extent practicable, RI and previously collected data will be presented in figures and tabular formats.
- The results of an assessment to evaluate if the RI acceptance/performance criteria were met as specified in the Site-Specific QAPP.
- The methods and rationales used in evaluating RI and previously collected data.
- Identification of MGP-related residuals. Observation of discolored/stained soil alone does not imply the presence of MGP-related residuals. Similarly, sampling locations where no MGP residuals were visibly observed does not also mean that all soil analytical results were below SLs. Notations of sheens, LNAPL, and DNAPL are noted in the field to illustrate the distribution of more highly affected areas of the site and adjacent properties and inform the RI/FS process.
- Conclusions regarding extent and nature of MGP residuals in the media of concern.
- A revised Site-Specific CSM with a discussion of environmental fate and transport of COPCs.
- A BLRA Report as discussed in the Multi-Site RAF.
- A discussion of anticipated future land use and reuse assessment.
- Any supporting material for RI data, including boring logs, monitoring well construction diagrams, groundwater sampling logs, laboratory analytical reports, and similar information.

8 FEASIBILITY STUDY SCOPE OF WORK

The FS will be completed in accordance with the USEPA RI/FS guidance document (USEPA, October 1988). Additional guidance is provided in the Multi-Site FS Support Document (IBS, July 2009).

8.1 FS Report

A draft FS Report will be prepared to summarize the activities performed and to present the associated results and conclusions. The report will include a summary of the initial screening study and will present the detailed analysis of remedial alternatives considered as a basis for developing a Record of Decision.

The FS Report is anticipated to include the following sections:

- Introduction and Site Background
- Development of Remedial Action Objectives and General Response Actions
- Identification and Screening of Remedial Technologies
- Development and Initial Screening of Remedial Alternatives
- Detailed Analysis of Alternatives
- Comparative Analysis of Alternatives
- Summary and Conclusions

The feasible technology options for remediation, if warranted, will be identified for each general response action, and the results of the remedial technologies screening will be described. Remedial alternatives will be developed by combining technologies identified in the screening process. The results of the initial screening of remedial alternatives will be described with respect to effectiveness, ability to implement, and cost. Final screening against the nine comparative criteria and the comparison of remedial alternatives will be presented with a final recommended remedial alternative. A description of the key requirements for implementation of the recommended alternative and an estimated construction will be presented in the summary and conclusions section of the report.

9 SCHEDULE

Figure 8 presents a preliminary project schedule for the major tasks to be performed in support of the former Crawford Station Site RI/FS for Parcels I, J, M, N, and T (Group III parcels). The overall schedule is dependent on USEPA approvals and weather conditions that may affect the timing of field sampling activities.

The preliminary schedule assumes the following:

- Approved subcontractors will be available during the time periods needed.
- Two rounds soil vapor sampling and analysis will be performed, approximately six months apart.
- Four rounds of quarterly groundwater monitoring from the proposed new wells will be collected.
- Based on the sampling results, if additional investigation activities are needed to delineate areas of concern, the schedule will be modified as necessary to accommodate the additional work needed.
- Treatability testing is not included; however, if treatability studies are identified during the RI, the schedule will be modified when the scope of work is identified.

A revised schedule may be submitted to USEPA at least 15 days following approval of the SSWP with the first monthly progress report.

The schedule for the SSWP addendum to address the RI to be performed on the Group III parcels and the Site-wide groundwater assessment will be determined with USEPA concurrence.

10 REFERENCES

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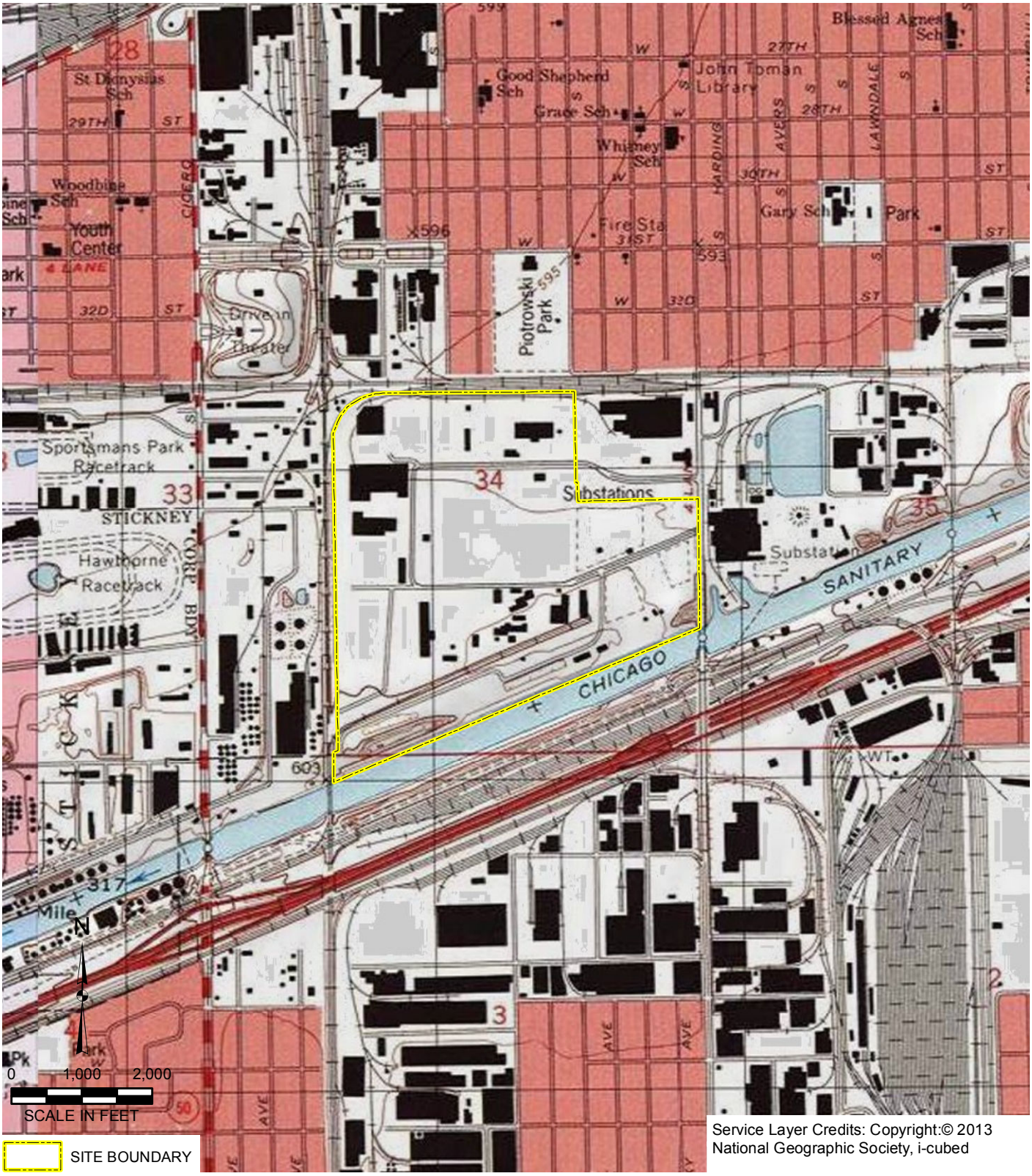
FIGURES



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Y:\GIS\Projects\20\2066\MXD\SSWP\Group_III\Report\Figure 1_Site Location Map.mxd Author: mmejac Date/Time: 8/12/2014, 3:54:06 PM

DRAWN BY/DATE:
MDM 6/24/14
REVIEWED BY/DATE:
RJH 8/13/14
APPROVED BY/DATE:
TLH 8/13/14

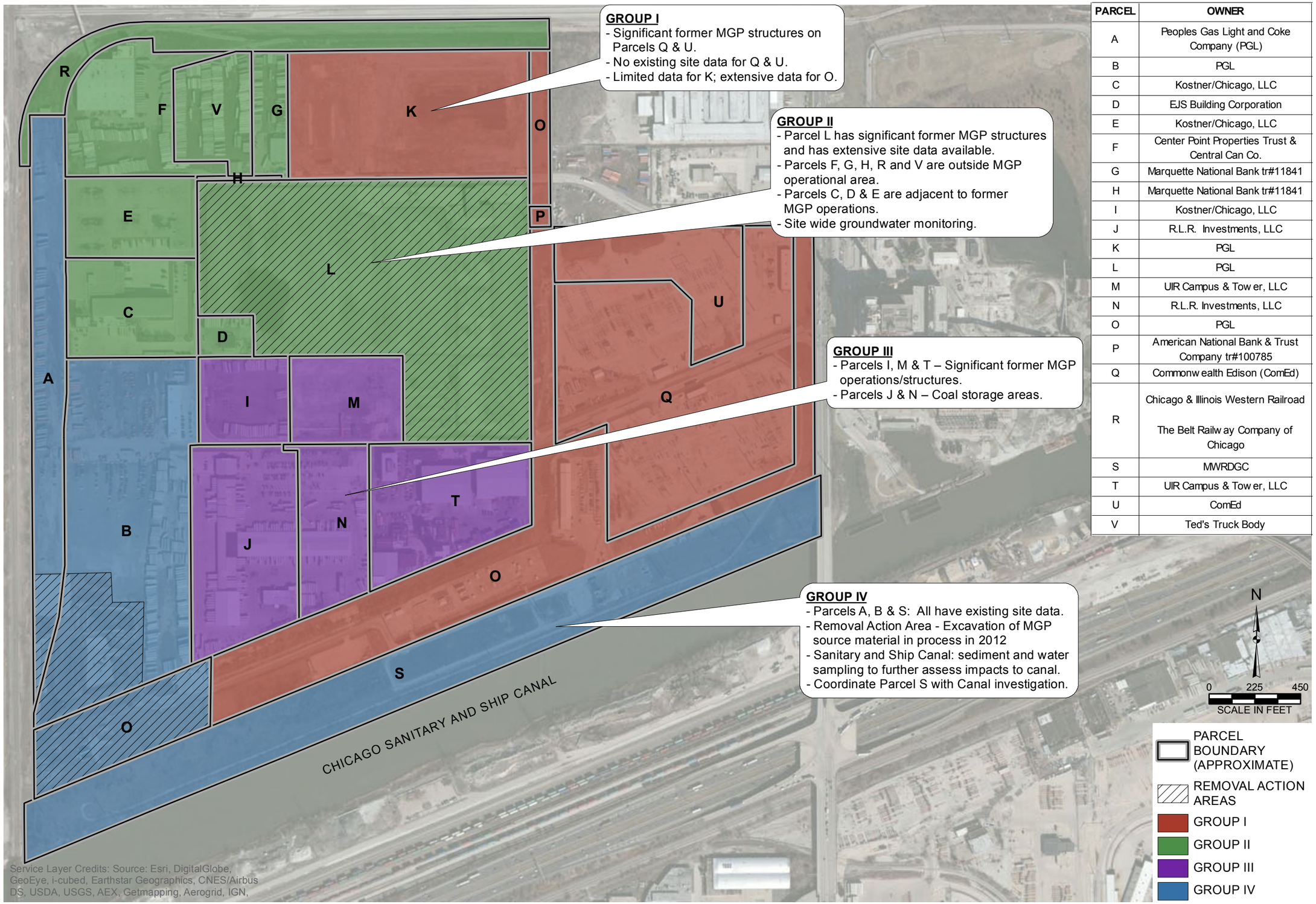
SITE LOCATION - (GROUP III PARCELS)

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 0
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO: 2066

FIGURE NO: 1

NATURAL RESOURCE TECHNOLOGY



PARCEL	OWNER
A	Peoples Gas Light and Coke Company (PGL)
B	PGL
C	Kostner/Chicago, LLC
D	EJS Building Corporation
E	Kostner/Chicago, LLC
F	Center Point Properties Trust & Central Can Co.
G	Marquette National Bank tr#11841
H	Marquette National Bank tr#11841
I	Kostner/Chicago, LLC
J	R.L.R. Investments, LLC
K	PGL
L	PGL
M	UIR Campus & Tow er, LLC
N	R.L.R. Investments, LLC
O	PGL
P	American National Bank & Trust Company tr#100785
Q	Commonw ealth Edison (ComEd)
R	Chicago & Illinois Western Railroad The Belt Railw ay Company of Chicago
S	MWRDGC
T	UIR Campus & Tow er, LLC
U	ComEd
V	Ted's Truck Body

DRAWN BY/DATE: MDM 6/24/14
REVIEWED BY/DATE: RJH 8/13/14
APPROVED BY/DATE: TLH 8/13/14

SITE FEATURES AND RI GROUPING PLAN - (GROUP III PARCELS)

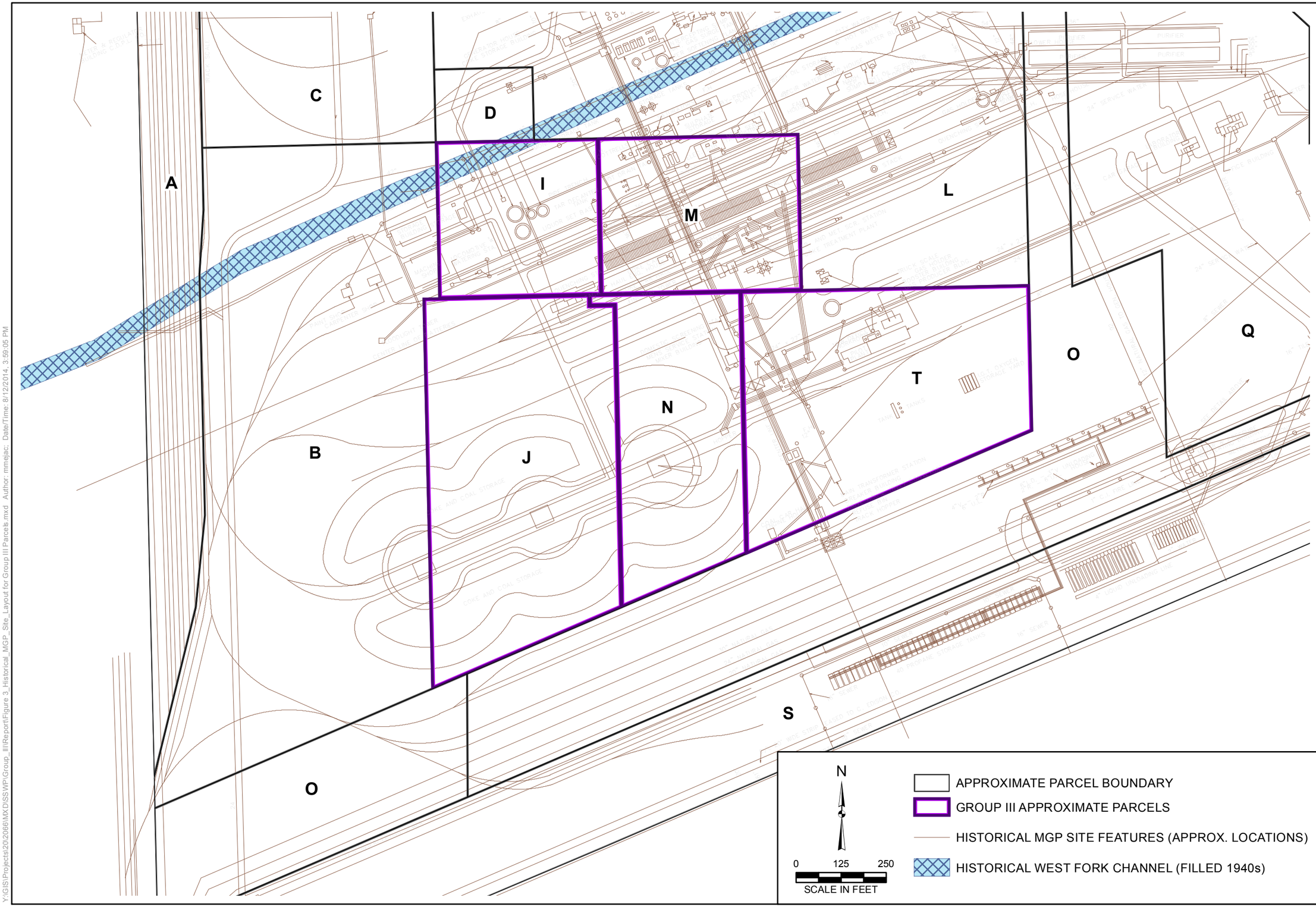
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 0
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 2

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\2\2066\MXD\SSWP\Group_III\Report\Figure 2_Site Features and RI Investigation Group Plan.mxd Author: mmejac Date/Time: 8/13/2014, 12:49:28 PM



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MDM 6/24/14
REVIEWED BY/DATE:
RJH 8/13/14
APPROVED BY/DATE:
TLH 8/13/14

HISTORICAL MGP SITE LAYOUT - (GROUP III PARCELS)

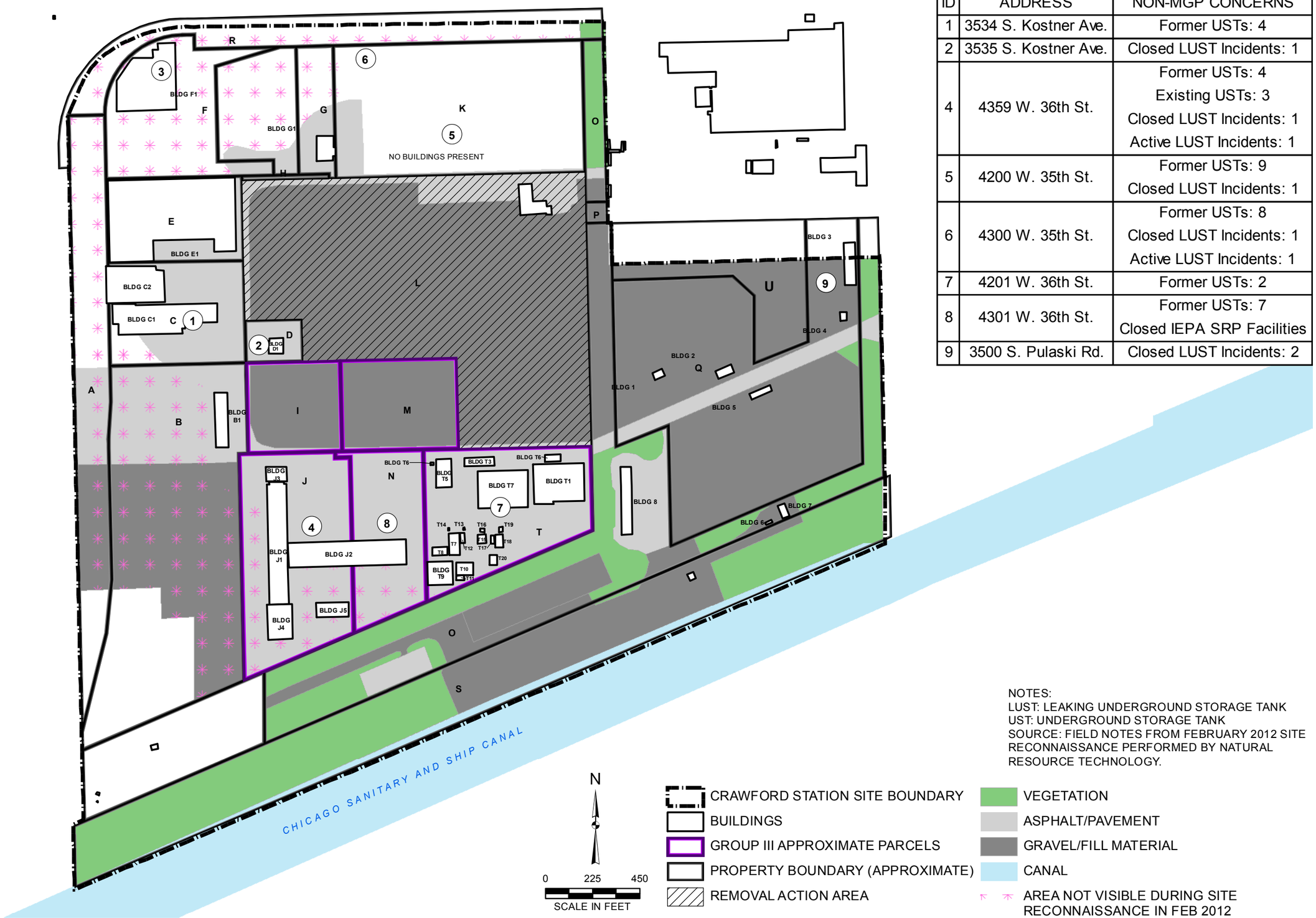
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 0
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 3

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\20\2066\MXD\SSWP\Group_III\Report\Figure 3_Historical_MGP_Site_Layout for Group III Parcels.mxd Author: mmejac Date/Time: 8/12/2014, 3:59:05 PM



ID	ADDRESS	NON-MGP CONCERNS
1	3534 S. Kostner Ave.	Former USTs: 4
2	3535 S. Kostner Ave.	Closed LUST Incidents: 1
4	4359 W. 36th St.	Former USTs: 4 Existing USTs: 3 Closed LUST Incidents: 1 Active LUST Incidents: 1
5	4200 W. 35th St.	Former USTs: 9 Closed LUST Incidents: 1
6	4300 W. 35th St.	Former USTs: 8 Closed LUST Incidents: 1 Active LUST Incidents: 1
7	4201 W. 36th St.	Former USTs: 2
8	4301 W. 36th St.	Former USTs: 7 Closed IEPA SRP Facilities
9	3500 S. Pulaski Rd.	Closed LUST Incidents: 2

NOTES:
LUST: LEAKING UNDERGROUND STORAGE TANK
UST: UNDERGROUND STORAGE TANK
SOURCE: FIELD NOTES FROM FEBRUARY 2012 SITE RECONNAISSANCE PERFORMED BY NATURAL RESOURCE TECHNOLOGY.

DRAWN BY/DATE: TDC 6/22/15
REVIEWED BY/DATE: RJH 6/22/15
APPROVED BY/DATE: TLH 6/23/15

SITE SURFACE CONDITIONS AND ON-SITE NON-MGP CONCERNS - (GROUP III PARCELS)

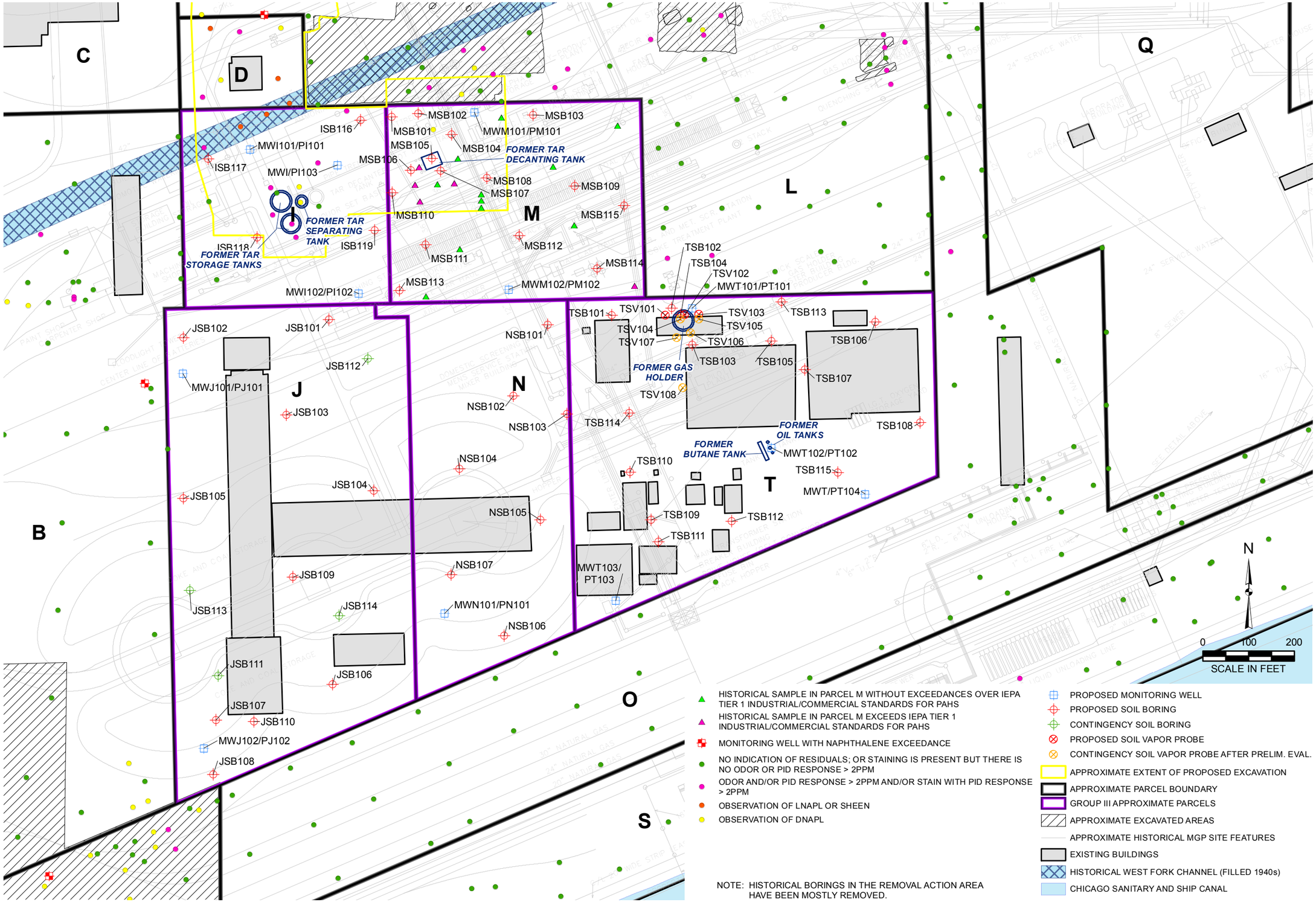
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 4

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\20\2066\MXD\SSWP\Group_III\Report\Figure 4_Site Surface Conditions and On-Site Non-MGP Concerns.mxd Author: tcushman; Date/Time: 6/29/2015, 1:01:59 PM



HISTORICAL SAMPLE IN PARCEL M WITHOUT EXCEEDANCES OVER IEPA TIER 1 INDUSTRIAL/COMMERCIAL STANDARDS FOR PAHS

HISTORICAL SAMPLE IN PARCEL M EXCEEDS IEPA TIER 1 INDUSTRIAL/COMMERCIAL STANDARDS FOR PAHS

MONITORING WELL WITH NAPHTHALENE EXCEEDANCE

NO INDICATION OF RESIDUALS; OR STAINING IS PRESENT BUT THERE IS NO ODOR OR PID RESPONSE > 2PPM

ODOR AND/OR PID RESPONSE > 2PPM AND/OR STAIN WITH PID RESPONSE > 2PPM

OBSERVATION OF LNAPL OR SHEEN

OBSERVATION OF DNAPL

NOTE: HISTORICAL BORINGS IN THE REMOVAL ACTION AREA HAVE BEEN MOSTLY REMOVED.

PROPOSED MONITORING WELL

PROPOSED SOIL BORING

CONTINGENCY SOIL BORING

PROPOSED SOIL VAPOR PROBE

CONTINGENCY SOIL VAPOR PROBE AFTER PRELIM. EVAL.

APPROXIMATE EXTENT OF PROPOSED EXCAVATION

APPROXIMATE PARCEL BOUNDARY

GROUP III APPROXIMATE PARCELS

APPROXIMATE EXCAVATED AREAS

APPROXIMATE HISTORICAL MGP SITE FEATURES

EXISTING BUILDINGS

HISTORICAL WEST FORK CHANNEL (FILLED 1940s)

CHICAGO SANITARY AND SHIP CANAL

DRAWN BY/DATE: TDC 7/1/15
REVIEWED BY/DATE: TLH 7/1/15
APPROVED BY/DATE: TLH 7/1/15

PROPOSED SAMPLING LOCATIONS - (GROUP III PARCELS)

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5A

NATURAL RESOURCE TECHNOLOGY

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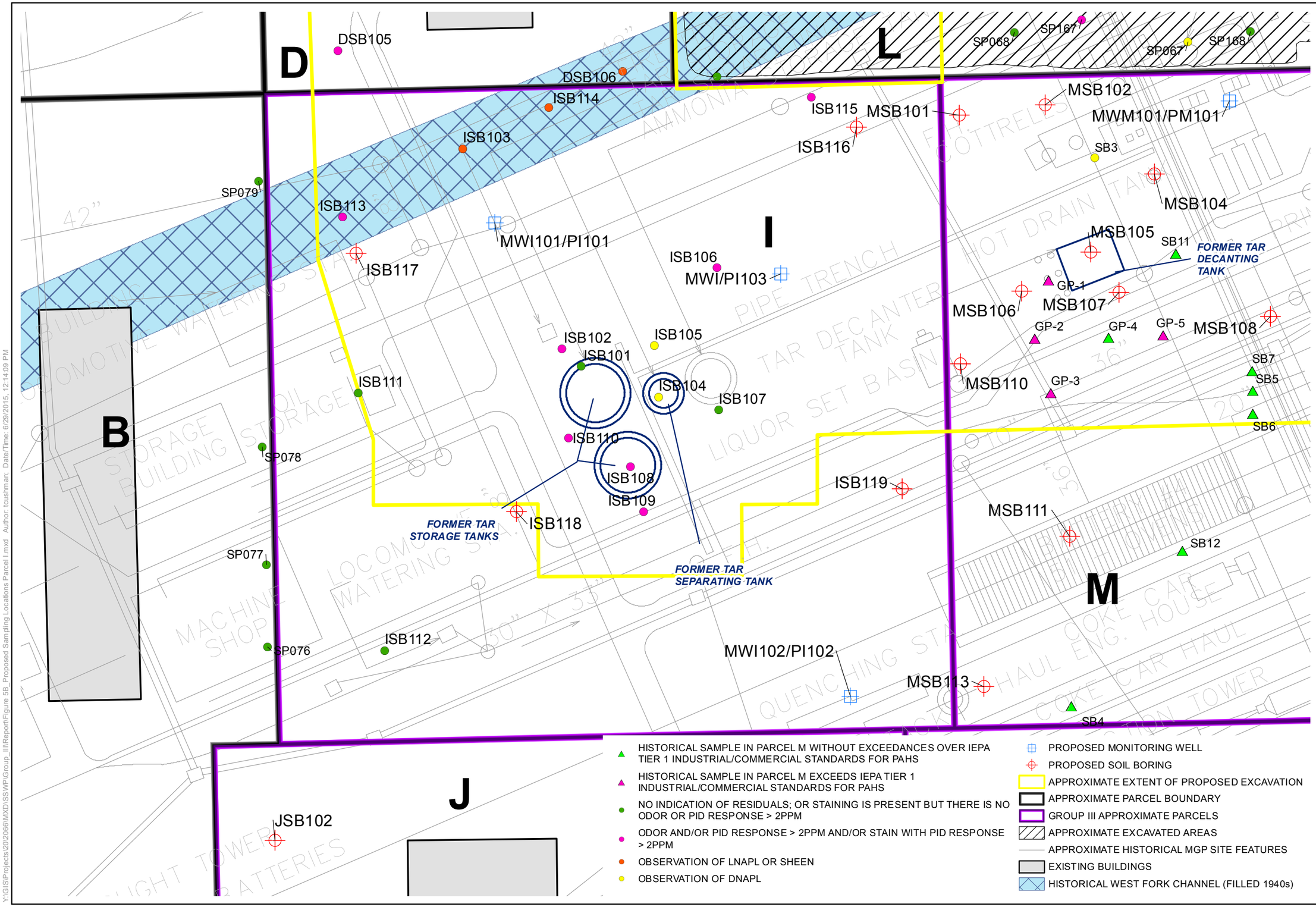

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REVIEWED BY/DATE: RJH 6/29/15
APPROVED BY/DATE: TLH 6/29/15

PROPOSED SAMPLING LOCATIONS PARCEL I - (GROUP III PARCELS)

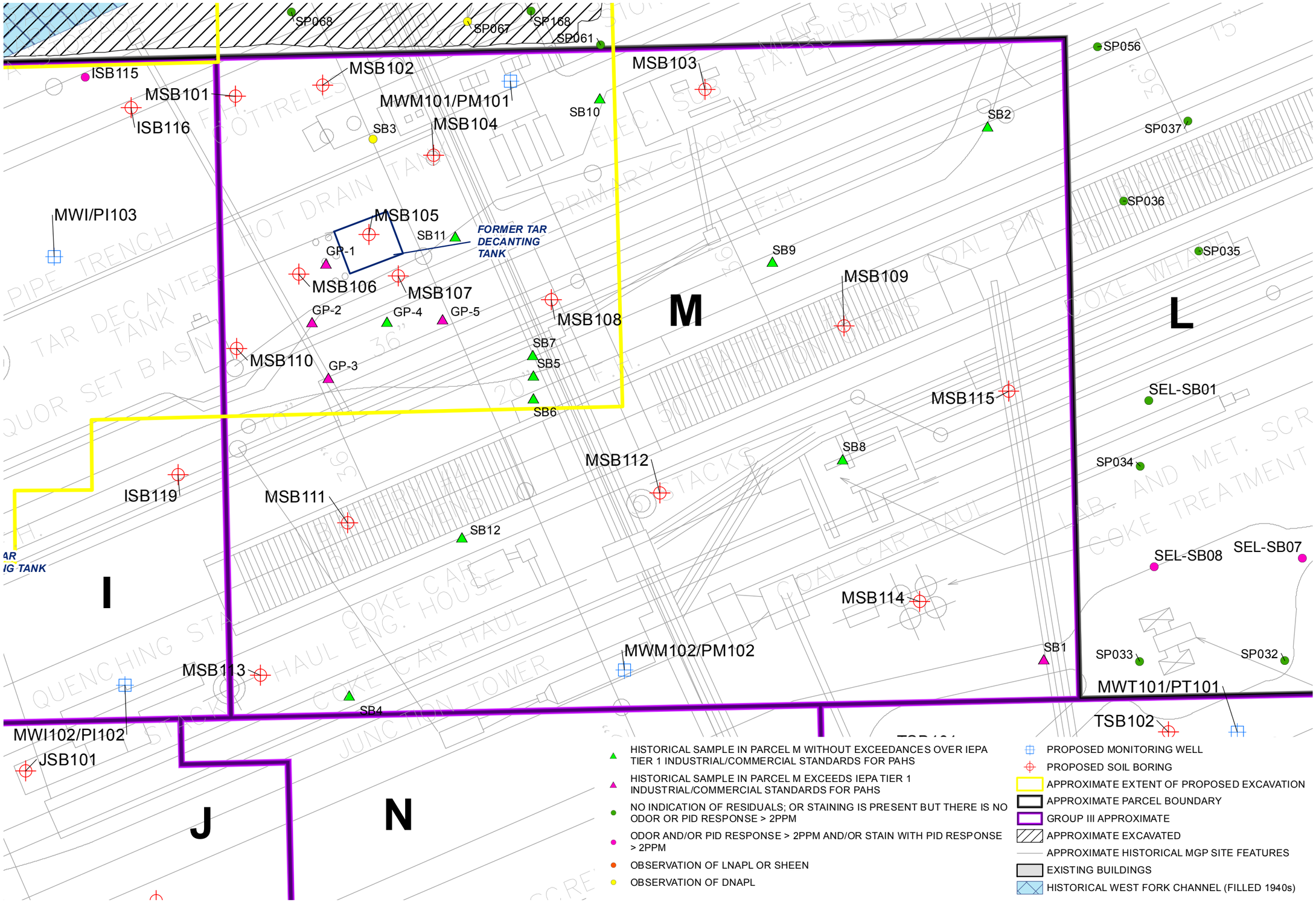
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5B

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\2012066\MXD\SSWP\Group_III\Report\Figure 5B_Proposed Sampling Locations Parcel I.mxd Author: tcushman Date/Time: 6/29/2015, 12:14:09 PM



DRAWN BY/DATE: TDC 6/29/15
REVIEWED BY/DATE: RJH 6/29/15
APPROVED BY/DATE: TLH 6/29/15

PROPOSED SAMPLING LOCATIONS PARCEL M - (GROUP III PARCELS)

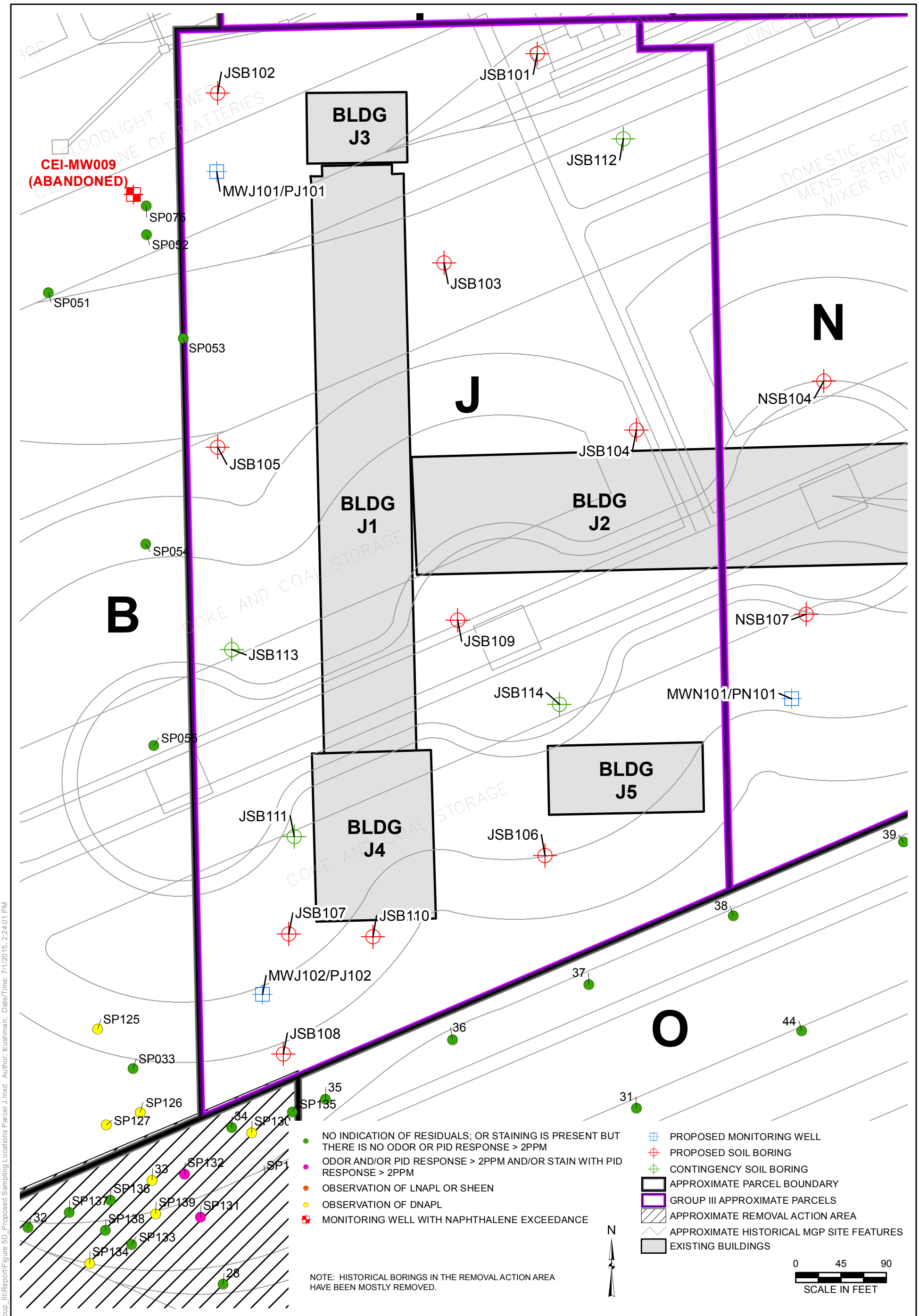
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5C

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\20\2066\MXD\SSWP\Group_III\Report\Figure 5C_Proposed Sampling Locations Parcel M.mxd Author: tcushman Date/Time: 6/29/2015 12:25:05 PM



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REVIEWED BY/DATE:
TLH 7/1/15
APPROVED BY/DATE:
TLH 7/1/15

PROPOSED SAMPLING LOCATIONS PARCEL J - (GROUP III PARCELS)

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5D

NATURAL RESOURCE TECHNOLOGY

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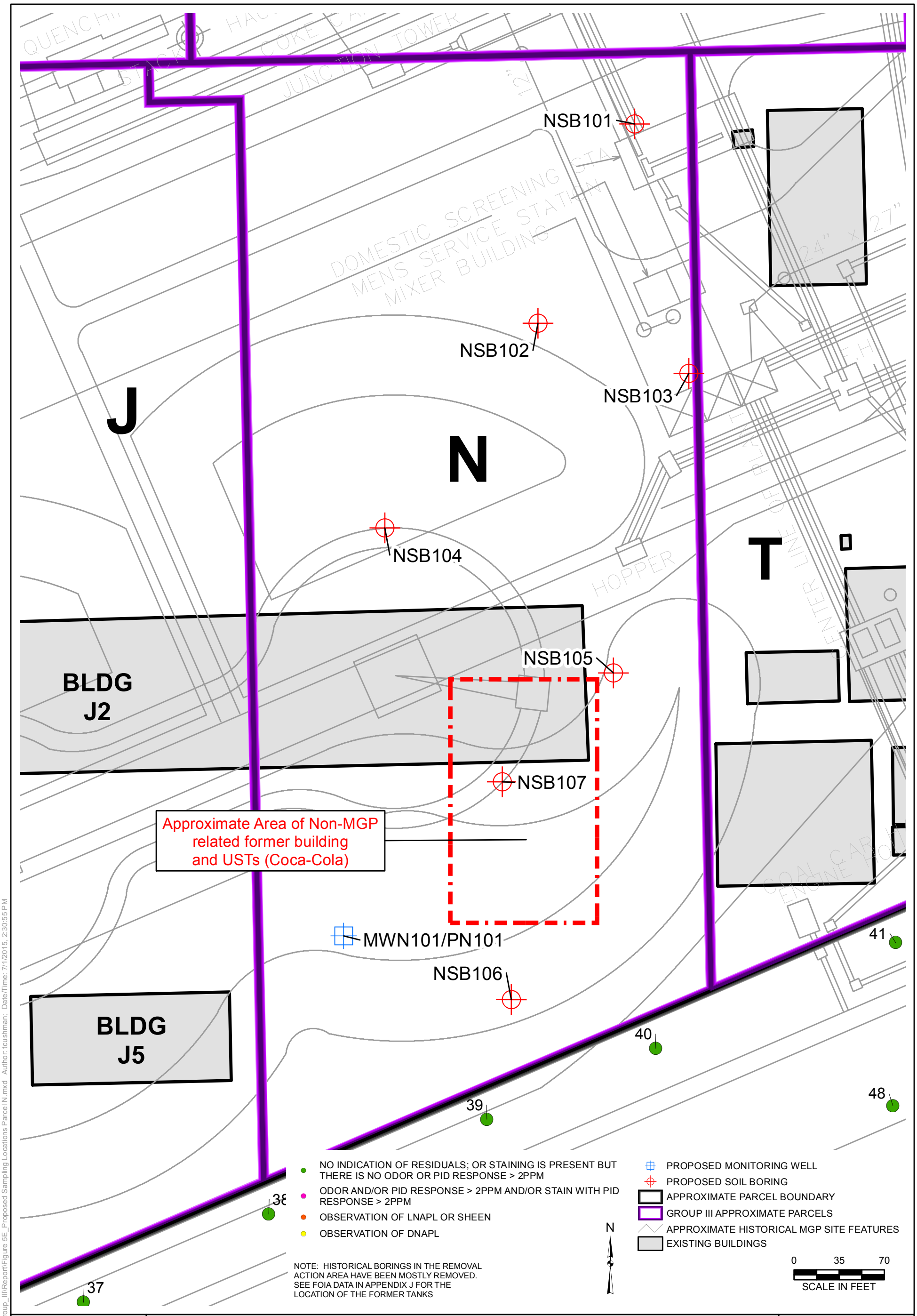

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TLH 7/1/15
APPROVED BY/DATE:
TLH 7/1/15

PROPOSED SAMPLING LOCATIONS PARCEL N - (GROUP III PARCELS)

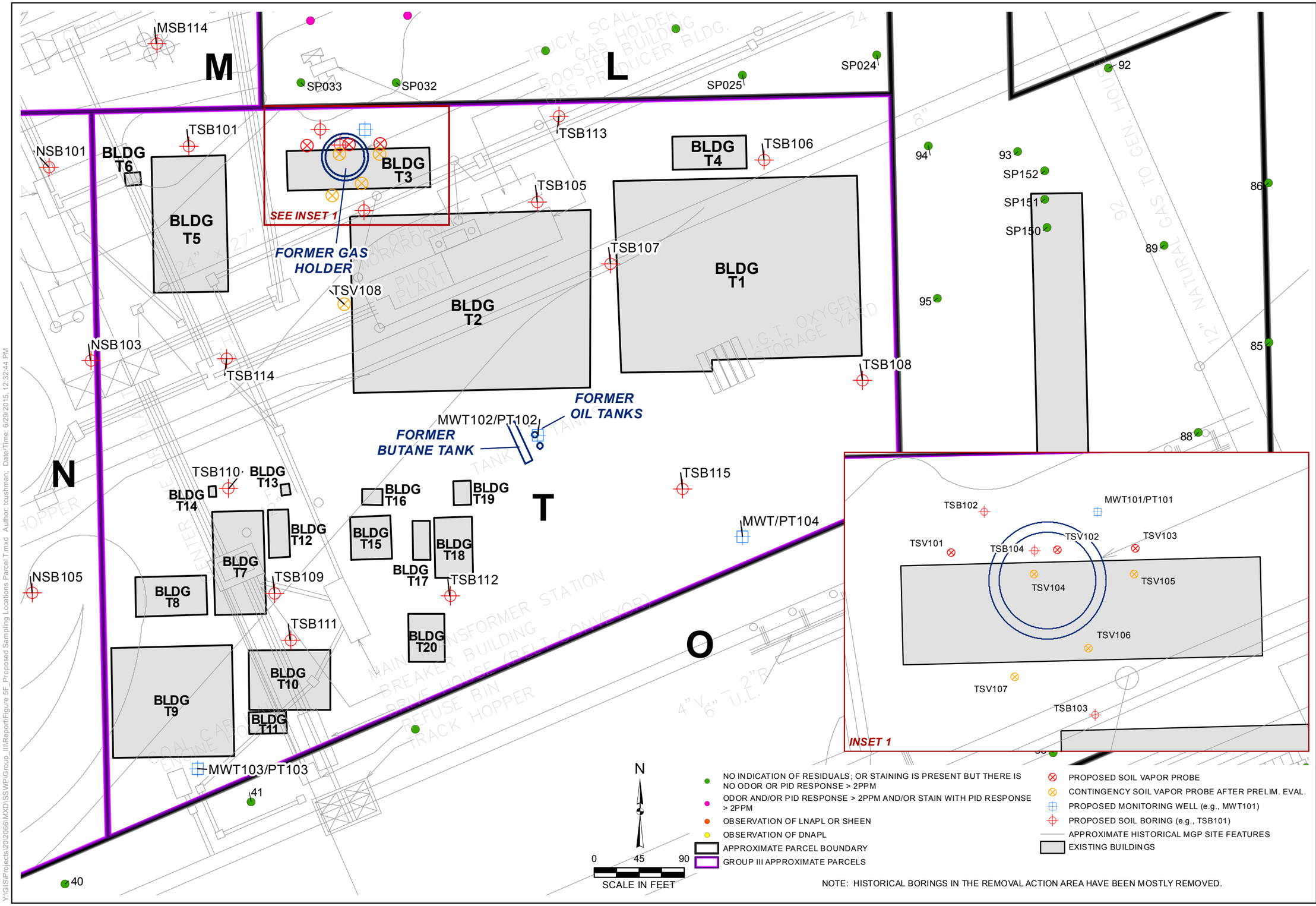
SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5E

NATURAL RESOURCE TECHNOLOGY

Y:\GIS\Projects\20\2066\MXD\SSWP\Group_III\Report\Figure 5E_Proposed Sampling Locations Parcel N.mxd Author: tcushman: Date/Time: 7/1/2015, 2:30:55 PM



NOTE: HISTORICAL BORINGS IN THE REMOVAL ACTION AREA HAVE BEEN MOSTLY REMOVED.

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APPROVED BY/DATE: TLH 6/29/15

PROPOSED SAMPLING LOCATIONS PARCEL 7 - (GROUP III PARCELS)

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 5F

NATURAL RESOURCE TECHNOLOGY

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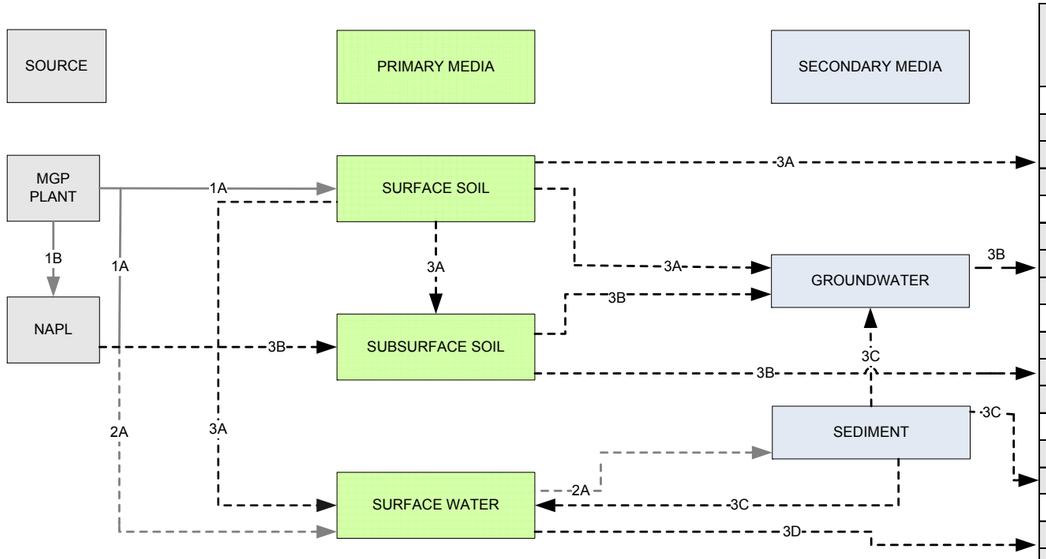


EXPOSURE ROUTE	HUMAN RECEPTORS				ECOLOGICAL RECEPTORS			
	INDUSTRIAL/ COMMERCIAL WORKER	CONSTRUCTION WORKER	RESIDENTIAL	RECREATIONAL	BIRDS	MAMMALS	FISH	BENTHIC INVERTEBRATES
INGESTION	▲	▲	●	●	○	○	NA	NA
DERMAL	▲	▲	●	●	○	○	NA	NA
INHALATION	▲	▲	●	●	○	○	NA	NA
INGESTION	○	○	○	○	○	○	NA	NA
DERMAL	○	▲	○	○	○	○	NA	NA
INHALATION	▲*	▲	▲*	○	○	○	NA	NA
INGESTION	▲	▲	●	○	○	○	NA	NA
DERMAL	▲	▲	●	○	○	○	NA	NA
INHALATION	▲*	▲	●*	○	○	○	NA	NA
INGESTION	NA	NA	NA	NA	NA	NA	NA	NA
DERMAL	NA	NA	NA	NA	NA	NA	NA	NA
INGESTION	NA	NA	NA	NA	NA	NA	NA	NA
DERMAL	NA	NA	NA	NA	NA	NA	NA	NA

GENERAL NOTES:

1. This site-specific Conceptual Site Model was developed based on the Generalized Conceptual Site Model and observations made during the July 19, 2011 site reconnaissance.
2. Exposure assumptions are presented in the Multi-Site Risk Assessment Framework.
3. Groundwater ingestion is not expected under current or future land use because a public water supply is obtained from Lake Michigan and local ordinance prohibits potable use of groundwater. Groundwater will be compared to Federal/State groundwater standards as part of the BLRA for informational purposes.
4. Birds (aquatic and upland) and mammals (aquatic and upland) are not considered to be receptors within Parcels C, I, J, M, N, and T due to insufficient habitat.
5. Refer to Section 4 of the report for additional discussion on the site specific CSM.

FOOTNOTES:

Known Historic

1A. MGP residuals were released to surface and subsurface soil during MGP operations which ceased in 1963.
1B. NAPL was released from the MGP plant, ceasing operations in 1963.

Potential Historic

2A. Records not complete to determine whether NAPL directly discharged to surface water (i.e. via historic ditch).

Potential Current/Future

3A. Surface soil will be characterized to assess worker exposure risk and to assess potential migration to surface water, subsurface soil and groundwater.
3B. Subsurface soil will be characterized to assess worker exposure risk and to assess potential migration to groundwater.
3C. Sediment will not be characterized to assess potential risk to human and ecological receptors as part of Group III remedial investigation activities.
3D. Surface water will not be characterized to assess potential to human and ecological receptors as part of Group III remedial investigation activities.

PATHWAY LEGEND:

▲ Pathway potentially complete and warrants further evaluation within the Baseline Risk Assessment.

● Pathway incomplete or considered insignificant under current land use condition, but potentially complete under future land use scenario.

○ Pathway not complete or considered insignificant; No further evaluation is recommended.

NA Not Applicable for Parcels I, J, M, N, and T.

* Inhalation exposure route may warrant further evaluation related to potential vapor intrusion into buildings based on subsurface soil conditions.

PATHWAY STATUS:

Known Historic
Potential Historic
Known
Potential Current / Future

DRAWN BY/DATE: TDC 6/22/15
REVIEWED BY/DATE: RJH 6/22/15
APPROVED BY/DATE: TLH 6/23/15

SITE SPECIFIC CONCEPTUAL MODEL (GROUP III)
CRAWFORD STATION SITE PARCELS I, J, M, N, AND T

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 6A

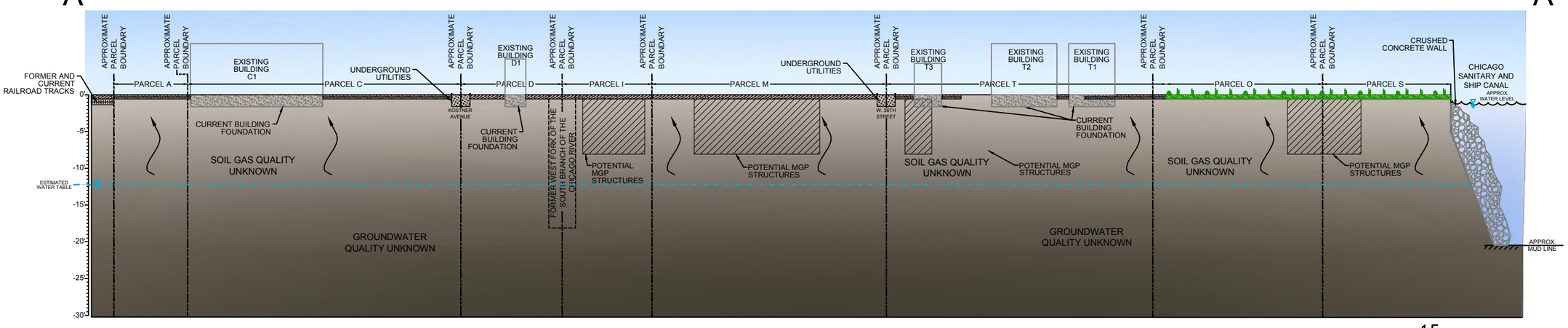
NATURAL RESOURCE TECHNOLOGY

APPROXIMATE PARCEL BOUNDARY
CROSS SECTION LINE
ESTIMATED WATER TABLE
HISTORICAL WEST FORK CHANNEL (FILLED 1940s)
POTENTIAL MGP STRUCTURES
CURRENT BUILDING FOUNDATION
UNDERGROUND UTILITIES
ASPHALT
CRUSHED ASPHALT
LANDSCAPED WITH GRASS
CRUSHED CONCRETE WALL

SOURCE NOTES:

1. AERIAL PHOTO SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING AEROGRID, IGN, IGP, SWESSTOPO, AND THE GIS USER COMMUNITY.
2. DRAWING COODINATES ARE REFERENCED TO ILLINOIS STATE PLANE, NAD 83, EAST ZONE, US FOOT.

GENERALIZED LAND USE SCENARIO



VERTICAL SCALE IN FEET: 15
HORIZONTAL SCALE IN FEET: 300

VERTICAL EXAGGERATION = 20

DRAWN BY:	DMD	DATE: 06/22/14
CHECKED BY:	RJH	DATE: 06/26/15
APPROVED BY:	TLH	DATE: 06/26/15
DRAWING NO:	2066-141-B6B	
REFERENCE:		

GRAPHICAL SITE-SPECIFIC CONCEPTUAL SITE MODEL - (GROUP III PARCELS) (A-A')

SITE SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

NATURAL RESOURCE TECHNOLOGY

PROJECT NO.
2066/14.1

FIGURE NO.
6B

Jun 26, 2015 11:06am PLOTTED BY: ddude SAVED BY: ddude
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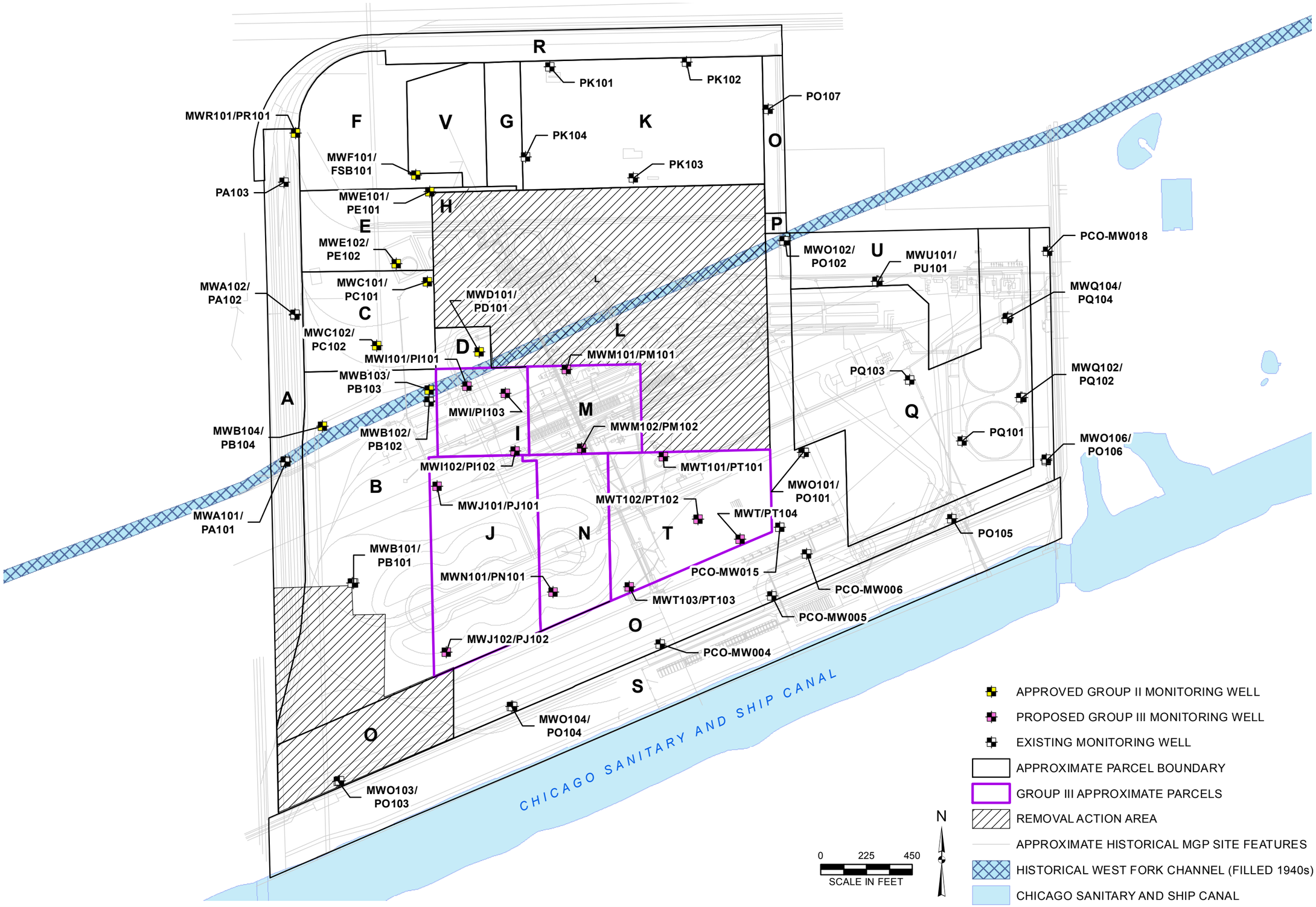

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REVIEWED BY/DATE: RJH 6/29/15
APPROVED BY/DATE: TLH 6/29/15

SITE-WIDE GROUNDWATER MONITORING NETWORK - (GROUP III PARCELS)

SITE-SPECIFIC WORK PLAN, ADDENDUM 2, REV. 1
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

PROJECT NO. 2066

FIGURE NO. 7

NATURAL RESOURCE TECHNOLOGY

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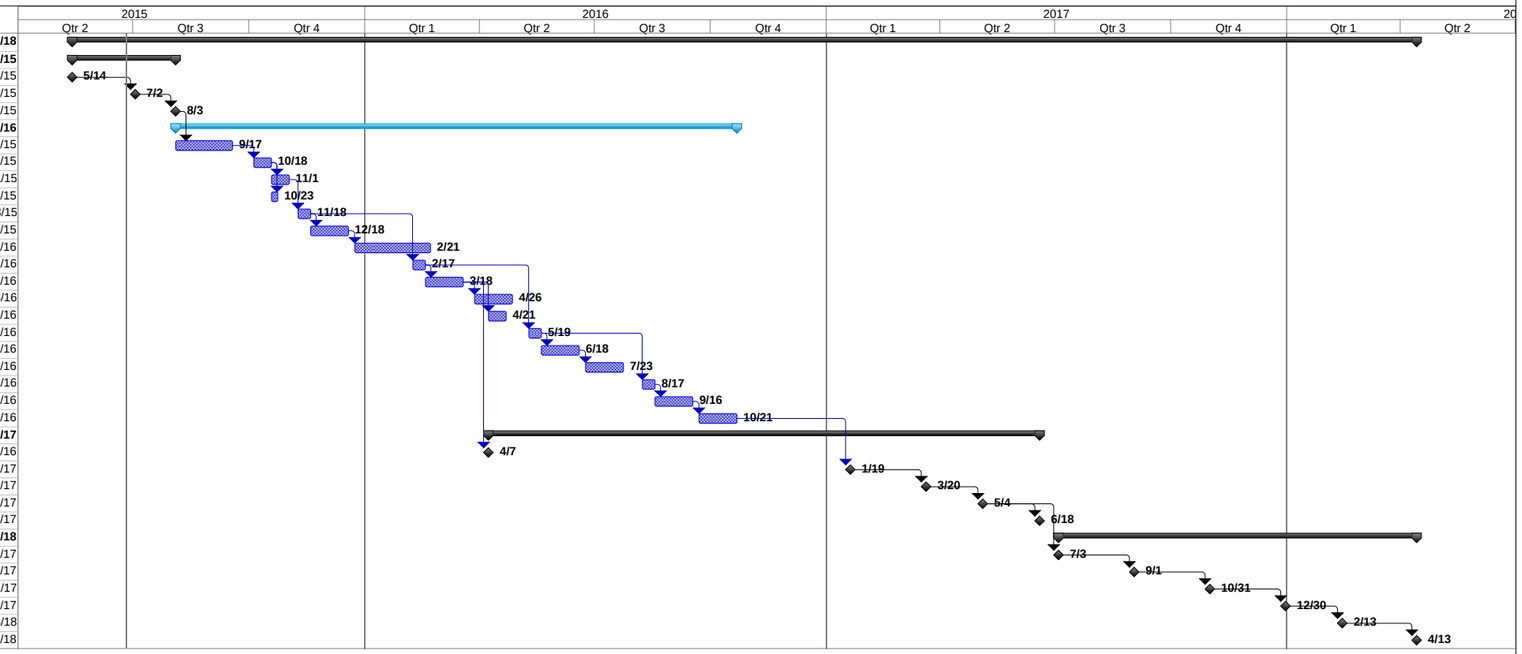
FIGURE 8
RI/FS Preliminary Scheduel - Group III Parcels

Date:June 26, 2015

Crawford Station Former Manufactured Gas Plant Site
CERCLA Docket No. V-W-08-C-917

ID	Task Name	Duration	Start	Finish
1	**Crawford Station Site ID: SSID B5HK**	**1052 days**	**Thu 5/14/15**	**Fri 4/13/18**
2	**Project Planning - Parcel Group 3**	**82 days**	**Thu 5/14/15**	**Mon 8/3/15**
3	Receive USEPA Comments on Draft SSWP Revision 0	0 days	Thu 5/14/15	Thu 5/14/15
4	Submit Site Specific Work Plan Revision 1 to USEPA	0 days	Thu 7/2/15	Thu 7/2/15
5	USEPA Approves SSWP Revision 1	0 days	Mon 8/3/15	Mon 8/3/15
6	**Initiate RI Field Work - Parcel Group 3**	**445 days**	**Tue 8/4/15**	**Fri 10/21/16**
7	Contractor Procurement and Permitting	45 days	Tue 8/4/15	Thu 9/17/15
8	Soil Boring Installation/Sampling	14 days	Mon 10/5/15	Sun 10/18/15
9	Groundwater Monitoring Well Installation/Development	14 days	Mon 10/19/15	Sun 11/1/15
10	Soil Gas Probe Installation	5 days	Mon 10/19/15	Fri 10/23/15
11	First Quarter RI GW and Soil Gas Sampling	10 days	Mon 11/9/15	Wed 11/18/15
12	Laboratory Analysis (first Quarter gw, soil gas, and soil)	30 days	Thu 11/19/15	Fri 12/18/15
13	Data Validation (first Quarter gw, soil gas, and soil)	60 days	Thu 12/24/15	Sun 2/21/16
14	Second Quarter RI GW and Soil Gas Sampling	10 days	Mon 2/8/16	Wed 2/17/16
15	Laboratory Analysis (second Quarter gw and soil gas)	30 days	Thu 2/18/16	Fri 3/18/16
16	Data Validation (second Quarter gw and soil gas)	30 days	Mon 3/28/16	Tue 4/26/16
17	Data Gap Analysis	14 days	Fri 4/8/16	Thu 4/21/16
18	Third Quarter RI GW Sampling	10 days	Tue 5/10/16	Thu 5/19/16
19	Laboratory Analysis (third Quarter gw)	30 days	Fri 5/20/16	Sat 6/18/16
20	Data Validation (third Quarter gw)	30 days	Fri 6/24/16	Sat 7/23/16
21	Fourth Quarter RI GW Sampling	10 days	Mon 8/8/16	Wed 8/17/16
22	Laboratory Analysis (fourth Quarter gw)	30 days	Thu 8/18/16	Fri 9/16/16
23	Data Validation (fourth Quarter gw)	30 days	Thu 9/22/16	Fri 10/21/16
24	**Prepare RI Report - Parcel Group 3**	**437 days**	**Thu 4/7/16**	**Sun 6/18/17**
25	Review Preliminary RI Data with USEPA	0 days	Thu 4/7/16	Thu 4/7/16
26	Submit RI Rpt - Rev 0 to USEPA	0 days	Thu 1/19/17	Thu 1/19/17
27	Receive USEPA Comments on RI Rpt - Rev 0	0 days	Mon 3/20/17	Mon 3/20/17
28	Submit RI Rpt - Rev 1 to USEPA	0 days	Thu 5/4/17	Thu 5/4/17
29	USEPA Approves RI Rpt - Rev 1	0 days	Sun 6/18/17	Sun 6/18/17
30	**Prepare FS Report - Parcel Group 3**	**270 days**	**Mon 7/3/17**	**Fri 4/13/18**
31	Submit Alternatives Array Tech Memo to USEPA	0 days	Mon 7/3/17	Mon 7/3/17
32	Receive USEPA Comments on Alternatives Array Tech Memo	0 days	Fri 9/1/17	Fri 9/1/17
33	Submit FS Rpt - Rev 0 to USEPA	0 days	Tue 10/31/17	Tue 10/31/17
34	Receive USEPA Comments on FS Rpt - Rev 0	0 days	Sat 12/30/17	Sat 12/30/17
35	Submit FS Rpt - Rev 1 to USEPA	0 days	Tue 2/13/18	Tue 2/13/18
36	USEPA approves FS Rpt - Rev 1	0 days	Fri 4/13/18	Fri 4/13/18



Project: \\pewfle\projects\1500\1515\Status Meeting Agend
Date: 06/25/15

Task		Rolled Up Task		Split		Group By Summary		Inactive Summary		Manual Summary Rollup		Finish-only	
Milestone		Rolled Up Milestone		External Tasks		Inactive Task		Manual Task		Manual Summary		Progress	
Summary		Rolled Up Progress		Project Summary		Inactive Milestone		Duration-only		Start-only			

1. This preliminary schedule is dependent on USEPA-approval and weather conditions to completed field investigations.

TABLES

Table 1: Site-Specific COPCs for Soil, Groundwater, and Soil Gas
Crawford Station Site-Specific Work Plan, Addendum 2 (Group III), Revision 1
USEPA ILN000510192

COPCs	Parcels Parcels I, J, N, M and T
Soil	
PVOCs[1] plus styrene	X
SVOCs[2]	X
PAHs[3]	X
Total Metals[4]	X
Total Cyanide	X
PCBs	X[5]
Groundwater	
PVOCs[1]	X
SVOCs[2]	X
Total and Dissolved PAHs[3]	X
Total and Dissolved Metals[4]	X
Available Cyanide	X
Soil Gas	
PVOCs[1]	X[6]
Naphthalene	X[6]

NOTES:

1. PVOC list of COPCs - benzene, ethylbenzene, toluene, m&p-xylenes, o-xylene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. Styrene will also be analyzed due to its frequancy of detection.
2. SVOC list of COPCs - 2,4-dimethylphenol, 2-methylphenol, 3&4-methylphenol, phenol, carbazole and dibenzofuran.
3. PAH list of COPCs - acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(ghi)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene and 2-methylnaphthalene.
4. Metal list of COPCs - antimony, arsenic, cadmium, chromium, lead, mercury, nickely, selenium, and thallium
5. PCBs to be collected at specific locations (TSB111 and MSB103) on Parcels M and T.
6. On Parcel T, soil vapor samples will be completed as part of initial field work.

X - Parameter selected as COPC
COPC - Constituents of potential concern
PAH - Polycyclic aromatic hydrocarbon
PCB - Polychlorinated biphenyl
PVOC - Petroleum VOC

Table 2 - Sampling and Analysis Plan Summary
Crawford Station Site-Specific Work Plan, Addendum II
USEPA ILN000510192

Sample Type	Sample Frequency	Estimated Number of Samples[1]	Parameter	Method	Field Duplicates[2] (1 extra volume)	MS/MSD[3] (2 extra volumes)	Equipment Blanks	Trip Blanks	TOTAL[4] (excludes equipment and trip blanks)	Estimated No. of Containers	Container Type	Minimum Volume	Preservation (Cool All Samples to 4° ± 2°C Unless 'None' Indicated)	Holding Time from Sample Date
Soil														
Soil Parcels M (HHRA and Feasibility Study)	15 borings and 2 well nest borings 17 surface (0-6") samples (1 per boring) 9 near surface (6"-24") sample[9] (1 per 2 surface samples) 20 subsurface (>24") samples[10] (2 per boring at potential impact area and 1 per boring at other area)	46	PVOCs[7]	5035/8260B	3	3	Equipment blanks will be collected at a frequency of 1 per soil or sediment sampling day with non-dedicated sampling equipment.	PVOC trip blank will accompany each cooler containing PVOC samples.	52	52 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	3	3			52	52	Amber Glass	8 oz	--	14/40 days
			SVOCs[11]	8270C	3	3			52	52	Amber Glass	8 oz	--	14/40 days
			Total Metals[12]	6020A	3	3			52	52	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	3	3			52	52	Plastic	8 oz	--	14 days
		1	PCBs[14]	8082A	1	1			2	2	Plastic	8 oz	--	14 days
Soil Parcel T (HHRA and Feasibility Study)	15 borings and 4 well nest borings 19 surface (0-6") samples (1 per boring) 10 near surface (6"-24") sample[9] (1 per 2 surface samples) 22 subsurface (>24") samples[10] (2 per boring at potential impact area and 1 per boring at other area)	51	PVOCs[7]	5035/8260B	3	3			57	57 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	3	3			57	57	Amber Glass	8 oz	--	14/40 days
			SVOCs[11]	8270C	3	3			57	57	Amber Glass	8 oz	--	14/40 days
			Total Metals[12]	6020A	3	3			57	57	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	3	3			57	57	Plastic	8 oz	--	14 days
		1	PCBs[14]	8082A	-[15]	-[15]			2	2	Plastic	8 oz	--	14 days
Soil Parcel J (HHRA and Feasibility Study)	10 (14) borings and 2 well nest borings 12 (16) surface (0-6") samples (1 per boring) 8 near surface (6"-24") sample[9] (1 per 2 surface samples) 12 (16) subsurface (>24") samples[10] (2 per boring at potential impact area and 1 per boring at other area)	32 (40)	PVOCs[7]	5035/8260B	2	2			#VALUE!	34 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	2	2			#VALUE!	#VALUE!	Amber Glass	8 oz	--	14/40 days
			SVOCs[11]	8270C	2	2			#VALUE!	#VALUE!	Amber Glass	8 oz	--	14/40 days
			Total Metals[12]	6020A	2	2			#VALUE!	#VALUE!	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	2	2			#VALUE!	#VALUE!	Plastic	8 oz	--	14 days
Soil Parcel N (HHRA and Feasibility Study)	7 borings and 1 well nest borings 8 surface (0-6") samples (1 per boring) 4 near surface (6"-24") sample[9] (1 per 2 surface samples) 8 subsurface (>24") samples[10] (1 per boring)	20	PVOCs[7]	5035/8260B	1	1			22	22 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	1	1			22	22	Amber Glass	8 oz	--	14/40 days
			SVOCs[11]	8270C	1	1			22	22	Amber Glass	8 oz	--	14/40 days
			Total Metals[12]	6020A	1	1			22	22	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	1	1			22	22	Plastic	8 oz	--	14 days
Soil Parcels I (HHRA and Feasibility Study)	4 borings and 3 well nest borings 7 surface (0-6") samples (1 per boring) 4 near surface (6"-24") sample[9] (1 per 2 surface samples) 10 subsurface (>24") samples[10] (2 per boring at potential impact area and 1 per boring at other area)	21	PVOCs[7]	5035/8260B	2	2			25	25 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	2	2			25	25	Amber Glass	8 oz	--	14/40 days
			SVOCs[11]	8270C	2	2			25	25	Amber Glass	8 oz	--	14/40 days
			Total Metals[12]	6020A	2	2			25	25	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	2	2			25	25	Plastic	8 oz		14 days
Soil (Soil Vapor Assessment) Chemical Parameters	3 (7) borings[14] Up to 2 subsurface (>24") samples per boring	6 (14)	PVOCs[7]	5030B/8260B	1	1			8/16	8/16 sets	5 g Encores (3/sample)	15 g	--	14 days
			PAHs[6]	8270 SIM	1	1			8/16	8/16	Amber Glass	8 oz	--	14/40 days
			Total Arsenic, Total Lead, Total Thallium	6020A	1	1			8/16	8/16	Plastic	8 oz	--	6 months
			Total Cyanide	9012A	1	1			8/16	8/16	Plastic	8 oz	--	14 days
Soil (Soil Vapor Assessment) Geotechnical Parameters	1 sample of clay per parcel 1 sample of fill from 1 soil vapor probe	5	Grain Size Distribution	ASTM D421/D422	--	--			1	1	16 oz glass	16 oz	None	--
			Moisture Content	ASTM D2216	--	--			1	1	16 oz glass	16 oz	keep in dark	28 days
		1	Bulk Density	ASTM D2937	--	--			1	1	Undisturbed Sample from Shelby Tube	Shelby Tube	None	--
			Specific Gravity of Soil Solids	ASTM D854	--	--			1	1			None	--
Soil Waste Characterization														
Soil Waste Characterization	Composite	1	Protocol B (Verify with receiving facility)	Various	--	--	--	--	1	1	Glass Jars	32 oz	--	varies
Groundwater														
Crawford Station Site Groundwater - Wells (Risk Assessment, Feasiblity)	Groundwater will be sampled quarterly for 4 quarters following well installation. Parameters may change after 12 months depending on initial results and Group II RI Site-wide groundwater assessment.	13 wells	PVOCs[7]	8021B or 8260B	2	1	--	'PVOC trip blanks will accompany each cooler containing PVOC	16	16 sets	Glass Vial	Three 40 mL	HCl to pH<2, Zero Headspace	14 days
			Total PAHs[6]	8270 SIM	2	1	--		16	16	Amber Glass	1 L	--	7/40 days
			SVOCs[11]	8270C	2	1	--		16	16	Amber Glass	1 L	--	7/40 days
			Total and Dissolved Metals[12]	6020	2	1	--		16	16	Plastic	500 ml	HNO3 to pH <2	6 mo.
			Available Cyanide	OIA-1677	2	1	--		16	16	Amber Plastic	500 ml	PbCO3; NaOH to pH>12	14 days
			GW Field Parameters[5]	Field	--	--	--	--	16	--	Field Measured	--	--	--

Table 2 - Sampling and Analysis Plan Summary
Crawford Station Site-Specific Work Plan, Addendum II
USEPA ILN000510192

Sample Type	Sample Frequency	Estimated Number of Samples[1]	Parameter	Method	Field Duplicates[2] (1 extra volume)	MS/MSD[3] (2 extra volumes)	Equipment Blanks	Trip Blanks	TOTAL[4] (excludes equipment and trip blanks)	Estimated No. of Containers	Container Type	Minimum Volume	Preservation (Cool All Samples to 4° ± 2°C Unless 'None' Indicated)	Holding Time from Sample Date
Water Waste Characterization														
Water Waste Characterization	Composite	1	Code B - CID Bio	Various	--	--	--	1	1	1	Glass Jar	32 oz	--	varies
Soil Vapor														
Soil Vapor (HHRA Indoor air pathway)	3 (7) locations[13] 2 probes per location; 1 sample per probe	6 (14)	PVOCs[7]	TO-15	1/2	--	--	--	6/14	6/14	Summa Canister	**6 L[8]**	--	30 days
			Naphthalene		1/2	--	--	--	6/14					
					1/2	--	--	--	6/14					
			Oxygen, Carbon Dioxide, and Methane	ASTM D1946 or USEPA Method 3C	1/2	--	--	--	6/14					

Notes:

1. Proposed number of samplesincludes planned contingency investigation locations in ( ).
2 Field duplicates will be collected at a frequency of 1 per 10 or fewer investigative water and soil vapor samples, and 1 per 20 or fewer investigative soil/sediment samples.
3 Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples will be collected at a frequency of 1 per group of 20 or fewer investigative water samples or soil samples. Additional volume will be determined by laboratory requirements.
4. Number of equipment and trip blanks is dependent on field conditions, equipment used, number of field days and number of coolers.
5. Field parameters for groundwater include temperature, pH, specific conductivity, oxidation-reduction potential, dissolved oxygen and turbidity.
6. PAHs include acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)floutanthene, benzo(ghi)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene and 2-methylnaphthalene.
7. PVOCs include benzene, ethylbenzene, toluene, m&p-xylenes, o-xylene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. Styrene is included for Crawford
8. Six liter summa canister will be used unless otherwise specified by laboratory to meet detection limit requirements.
9. Near surface soil samples from 6-24" bgs will be collected only at locations where true surface soil samples are collected (i.e. no surface cover is present).

10. Subsurface soil samples will be collected from intervals where impacts are observed (visible impact, odor, PID response). Where tar-like material is observed, soil samples may not be analyzed because these observations may be presumed to be MGP source material. If no impacts are observed, the sample will be collected at the base of the fill layer.

11. SVOCs include 2,4-dimethylphenol, 2-methylphenol, 3&4-methylphenol, phenol, carbazole and dibenzofuran.
12. Metals include antimony, arsenic, cadmium, chromium, lead, mercury, nickely, selenium, and thallium.
13. The second number includes the contigent soil vapor locations proposed for Parcel T
14. PCBs collected at two specific locations: MSB103 and TSB111.
15. One sample of PCB field duplicate and one sample of PCB MS/MSD are collected for MSB103 and TSB111.

COPC - Compound of Potential Concern
FS - Feasibility study
HHRA - Human health risk assessment
PAH - Polycyclic aromatic hydrocarbon
PCB - Polychlorinated biphenyl
PID - Photoionization detector
PVOC - Petroleum VOC
VOC - Volatile organic compound

Table 3 – Boring, Probe and Monitoring Well Location Strategy
Crawford Station Site-Specific Work Plan, Addendum 2, Revision 1
USEPA ILN000510192

Location		Rationale
Monitoring Well Nests[1]		
Parcel I	MWI101/PI101	Evaluate groundwater quality and parameters downgradient of the historical West Fork Channel (Filled 1940s).
	MWI102/PI102	Evaluate groundwater quality and parameters along the southern boundary of Parcel I.
	MWI103/PI103	Evaluate groundwater quality and parameters in the northeastern portion of Parcel I.
Parcel J	MWJ101/PJ101	Evaluate groundwater quality and parameters along the western boundary of Parcel J; re-examine the historical naphthalene exceedance detected in the nearby groundwater well located in Parcel B.
	MWJ102/PJ102	Evaluate groundwater quality and parameters northeast of the remedial excavation areas located in Parcel B and Parcel O.
Parcel M	MWM101/PM101	Evaluate groundwater quality and parameters adjacent to the remedial excavation area located in Parcel L.
	MWM102/PM102	Evaluate groundwater quality and parameters along the southern boundary of the Gas Production Area of Parcel M.
Parcel N	MWN101/PN101	Evaluate groundwater quality and parameters in the southwestern portion of Parcel N.
Parcel T	MWT101/PT101	Evaluate groundwater quality and parameters downgradient of the historical Gas Holder located in Parcel T.
	MWT102/PT102	Evaluate groundwater quality and parameters between the historical Oil Tanks located in Parcel T.
	MWT103/PT103	Evaluate groundwater quality and parameters at the southwestern corner of Parcel T adjacent to Parcel O and Parcel N.
	MWT104/PT104	Evaluate groundwater quality and parameters at the southeastern portion of Parcel T adjacent to south boundary.
Soil Borings[2]		
Parcel I	ISB116	Evaluate soil quality adjacent to the remedial excavation area located in Parcel L (drill to 25-feet or greater).
	ISB117	Evaluate soil quality adjacent to the proposed excavated area located in Parcel I, along the historical West Fork Channel (drill to 25-feet or greater).
	ISB118	Evaluate soil quality adjacent to the historical Tar Tanks located in Parcel I, along the proposed excavation area boundary (drill to 25-feet or greater).
	ISB119	Evaluate soil quality along the eastern boundary of Parcel I.
	MWI101/P101 (Soil Boring)	Evaluate soil quality adjacent to the proposed excavated area located in Parcel I, along the historical West Fork Channel.
	MWI102/P102 (Soil Boring)	Evaluate soil quality along the southern boundary of Parcel I.
	MWI103/P103 (Soil Boring)	Evaluate soil quality in the northeastern portion of Parcel I.

Soil Borings (cont.)		
Parcel J	JSB101	Evaluate soil quality along the north boundary to assess the impact from Parcel I; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB102	Evaluate soil quality in the northwestern portion of Parcel J.
	JSB103	Evaluate soil quality in the north-central portion of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB104	Evaluate soil quality along the eastern boundary of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB105	Evaluate soil quality along the western boundary of Parcel J.
	JSB106	Evaluate soil quality in the southeastern portion of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB107	Evaluate extent of DNAPL impact observed in adjacent soil borings located in Parcel B; provide data to assess the need for vapor intrusion investigation on Parcel J buildings (drill to 25-feet or greater).
	JSB108	Evaluate extent of DNAPL impact observed in adjacent soil borings located in Parcel O (drill to 25-feet or greater).
	JSB109	Evaluate soil quality along the south-central portion of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB110	Evaluate soil quality along the south-central portion of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings.
	JSB111 (Contingency Boring)	Evaluate soil quality in the southwestern portion of Parcel J; provide data to assess the need for vapor intrusion investigation on Parcel J buildings if potential MGP Residuals are found at JSB107 and SB110.
	JSB112 (Contingency Boring)	Evaluate soil quality in the northeastern portion of Parcel J, if potential MGP Residuals are found at JSB101 and SB103.
	JSB113 (Contingency Boring)	Evaluate soil quality along the western boundary of Parcel J. if potential MGP Residuals are found at JSB105 and JSB111.
	JSB114 (Contingency Boring)	Evaluate soil quality in the southeastern portion of Parcel J. if potential MGP Residuals are found at JSB106 and JSB109.
	MWJ101/PJ101 (Soil Boring)	Evaluate soil quality along the western boundary of Parcel J.
	MWJ102/PJ102 (Soil Boring)	Evaluate extent of DNAPL impact observed in adjacent soil borings located in Parcel B.
Parcel M	MSB101	Evaluate soil quality at the northwestern corner of Parcel M; determine the extent of impacts from adjacent Parcel L and Parcel I.
	MSB102	Evaluate extent of DNAPL impact observed in adjacent soil boring located in Parcel M.
	MSB103	Evaluate soil quality within the historical Electric Substation Building (drill to 25-feet or greater).
	MSB104	Evaluate extent of DNAPL impact observed in adjacent soil boring located in Parcel M.
	MSB105	Evaluate soil quality within the historical Tar Decanting Tank located in Parcel M (drill to 25-feet or greater).

Soil Borings (cont.)		
Parcel M	MSB107	Evaluate soil quality adjacent to the historical Tar Decanting Tank (drill to 25-feet or greater).
	MSB108	Evaluate soil quality in the center of Parcel M.
	MSB109	Evaluate soil quality in the eastern portion of Parcel M.
	MSB110	Evaluate soil quality along the western boundary of Parcel M.
	MSB111	Evaluate soil quality in the southwestern portion of Parcel M.
	MSB112	Evaluate soil quality in the south-central portion of Parcel M.
	MSB113	Evaluate soil quality at the southwestern corner of Parcel M.
	MSB114	Evaluate soil quality in the southeastern portion of Parcel M.
	MSB115	Evaluate soil quality along the eastern boundary of Parcel M. .
	MWM101/PM101 (Soil Boring)	Evaluate extent of DNAPL impact observed in adjacent soil boring located in Parcel L.
	MWM102/PM102 (Soil Boring)	Evaluate soil quality along the southern boundary of Parcel M.
Parcel N	NSB101	Evaluate soil quality along the eastern boundary of Parcel N.
	NSB102	Evaluate soil quality in the north-central portion of Parcel N.
	NSB103	Evaluate soil quality along the eastern boundary of Parcel N.
	NSB104	Evaluate soil quality in the center of Parcel N.
	NSB105	Evaluate soil quality in the southeastern portion of Parcel N; provide data to assess the need for vapor intrusion investigation on Parcel N buildings.
	NSB106	Evaluate soil quality along the southern boundary of Parcel N.
	NSB107	Evaluate soil quality in the southwestern portion of Parcel N.
	MWN101/PN101 (Soil Boring)	Evaluate soil quality in the southwestern portion of Parcel N.
Parcel T	TSB101	Evaluate soil quality at the northwestern corner of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB102	Evaluate soil quality adjacent to the historical Gas Holder located in Parcel T and along the northern boundary; provide data to assess the need for vapor intrusion investigation on Parcel T buildings (drill to 25-feet or greater).
	TSB103	Evaluate soil quality adjacent to the historical Gas Holder and in the northern portion of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings (drill to 25-feet or greater).
	TSB104	Evaluate soil quality within the historical Gas Holder located in Parcel T (drill to 25-feet or greater).
	TSB105	Evaluate soil quality in the northern portion of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB106	Evaluate soil quality in the northeastern portion of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB107	Evaluate soil quality between north Parcel T buildings; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB108	Evaluate soil quality along the eastern boundary of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.

Soil Borings (cont.)		
Parcel T	TSB109	Evaluate soil quality in the western portion of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB110	Evaluate soil quality in the western portion of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB111	Evaluate soil quality within the historical Main Transformer Station located in Parcel T (drill to 25-feet or greater).
	TSB112	Evaluate soil quality between south Parcel T buildings; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	TSB113	Evaluate soil quality along the north boundary of Parcel T.
	TSB114	Evaluate soil quality in the west-central portion of Parcel T.
	TSB115	Evaluate soil quality in the southeastern portion of Parcel T.
	MWT101/PT101 (Soil Boring)	Evaluate soil quality adjacent to the historical Gas Holder and along the northern boundary; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	MWT102/PT102 (Soil Boring)	Evaluate soil quality within the historical Oil and Butane Tanks located in Parcel T.
	MWT103/PT103 (Soil Boring)	Evaluate soil quality at the southwestern corner of Parcel T; provide data to assess the need for vapor intrusion investigation on Parcel T buildings.
	MWT104/PT104 (Soil Boring)	Evaluate soil quality at the southeastern portion of Parcel T adjacent to south boundary.
Soil Gas Probes[3]		
Parcel T	TSV101	Evaluate potential vapor intrusion at Building located over the historical Gas Holder located in Parcel T.
	TSV102	
	TSV103	
	TSV104 (Contingency Probe)	Contingency soil boring locations if preliminary evaluation shows that more soil gas probes are needed to evaluate potential vapor intrusion risks surrounding the historical Gas Holder located in Parcel T.
	TSV105 (Contingency Probe)	
	TSV106 (Contingency Probe)	
	TSV107 (Contingency Probe)	
	TSV108 (Contingency Probe)	

Notes:

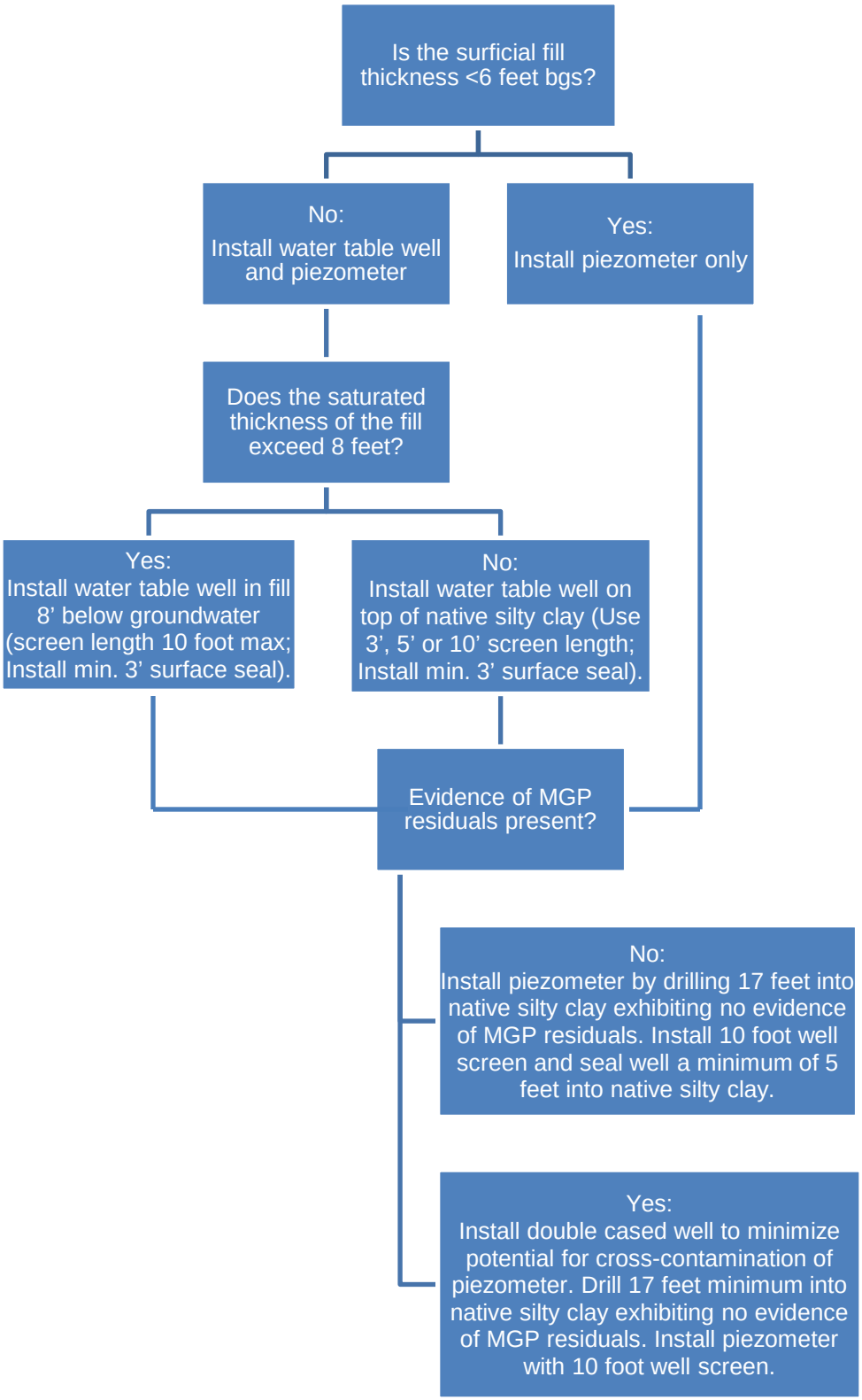
[1] Monitoring well locations will consist of a well nest: one water table well intersecting the water table in fill and one piezometer screened and sealed at least 5 feet into the silty clay. Piezometer will be installed to a target depth of approximately 15 feet below the top of the clay unit to enable a sealed interval of at least 5 feet between the base of the fill unit and the top of the piezometer screen. Soil borings for monitoring wells will be advanced to depths of 25 feet below ground surface or greater.

[2] Unless otherwise noted, soil borings will be advanced to a minimum depth of 20 feet below ground surface or until 4 feet of native clay is encountered which does not exhibit visual, PID or olfactory evidence of impacted conditions, whichever depth is greater. Minimum depth variances are noted in table above. Samples will be collected as follows:

1) One sample at the surface (or 0-6" below surficial gravel/asphalt)
2) At locations where there is no ground cover, an additional sample will be collected from 6-24 inches bgs.
3) One subsurface soil samples will be collected at each soil boring location between 2 feet bgs and the boring termination depth. Two samples may be collected per the SSWP if evidence of MGP residuals is observed.

[3] Soil vapor probes will be advanced to depths of 6 feet below ground surface or greater. The depth is the one without taking the overlying cover such as asphalt or concrete into account. If no evidence of impacts is present in a boring, a sample will be collected from the 2-4 feet below ground surface interval.

Table 4: Well Nest Installation Decision Tree
Site-Specific Work Plan Addendum 2
Crawford Station MGP Site
USEPA ILN000510192



APPENDIX A

HISTORICAL SITE INFORMATION

APPENDIX A1

HISTORICAL SITE MAPS AND PHOTOGRAPHS

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

2009

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

2005

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1999

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1994

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1988

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1984

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1978

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1972

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1962

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1951

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

HIG
HISTORICAL INFORMATION GATHERERS, INC.

Crawford Station
3500 S. Pulaski Road
Chicago, IL

1938

HIG Project Number: MBB-5208

Client Project Number: 2066

Approximate Scale 1:6000 (1"=500')

N
W E
S

Former Crawford Station MGP
3500 South Pulaski Road
Chicago, IL 60632

Inquiry Number: 3178504.3
October 31, 2011

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/31/11

Site Name:
Former Crawford Station MGP
3500 South Pulaski Road
Chicago, IL 60632

Client Name:
Natural Resource Technology
23713 W. Paul Road
Pewaukee, WI 53072

EDR Inquiry # 3178504.3

Contact: Ronald J. Horan

EDR® Environmental Data Resources Inc

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Address: 3500 South Pulaski Road
City, State, Zip: Chicago, IL 60632
Cross Street:
P.O. # NA
Project: 2066
Certification # 16D5-42FC-AE8F

Maps Provided:

2004	1936
2002	
1992	
1989	
1987	
1951	

Sanborn® Library search results
Certification # 16D5-42FC-AE8F

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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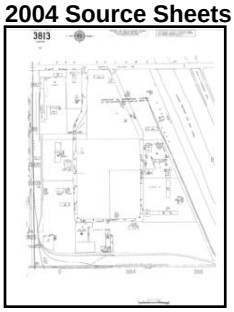


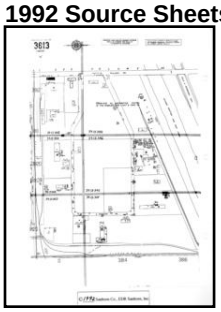
Volume 37 38, Sheet 3813

2002 Source Sheets

Volume 38, Sheet 3813

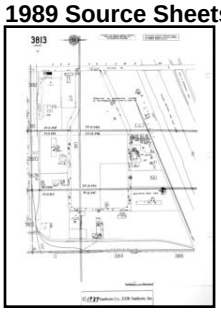
Volume 37 38, Sheet 3813

1992 Source Sheets



Volume 37, Sheet 3813

1989 Source Sheets



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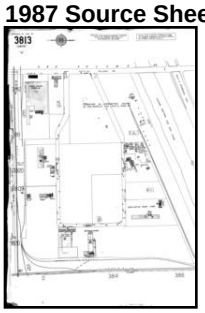
1987 Source Sheets



Volume 37, Sheet 3813

Volume 37, Sheet 3813

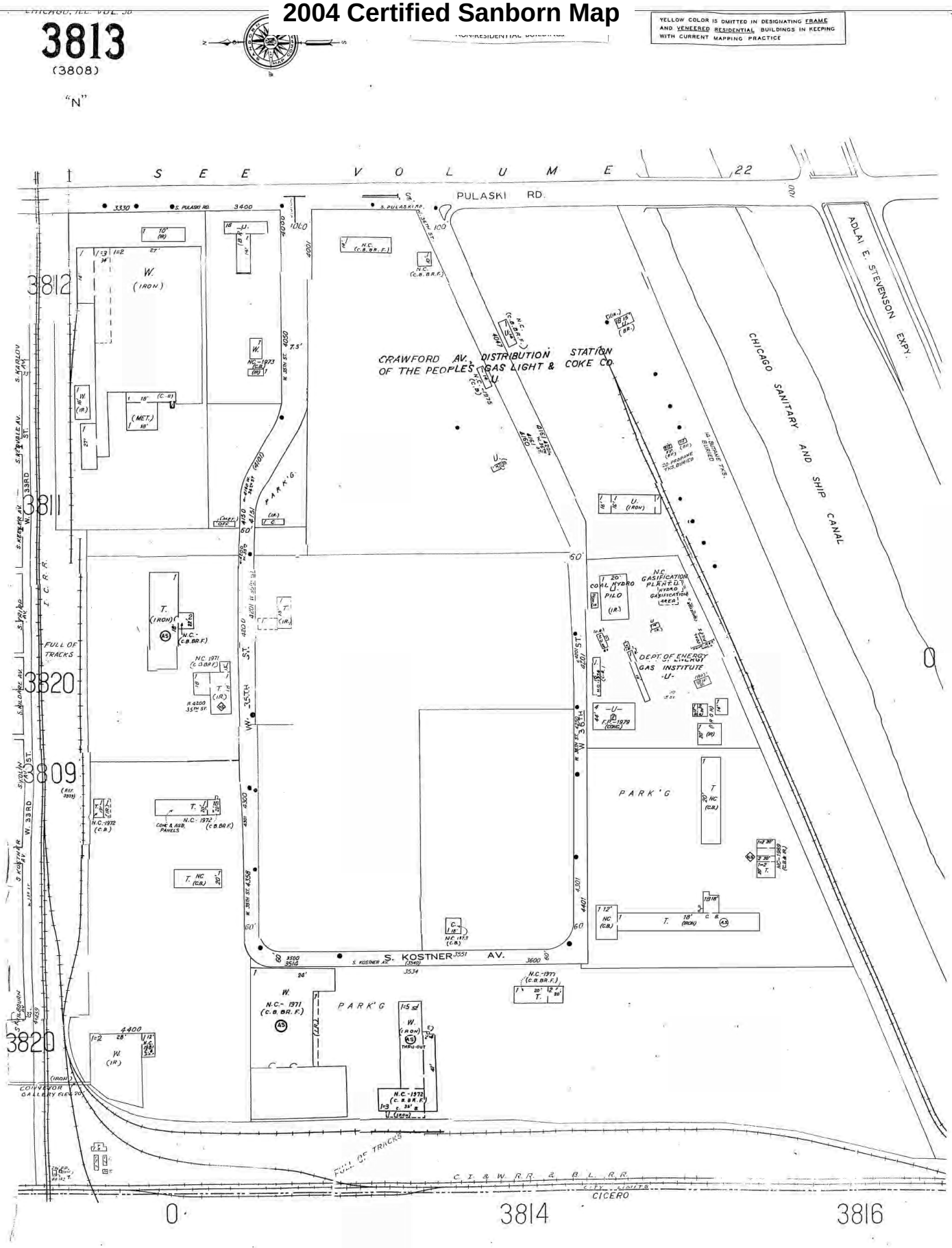
1951 Source Sheets

Volume 36, Sheet 3813

1936 Source Sheets

Volume 36, Sheet 3814

2004 Certified Sanborn Map



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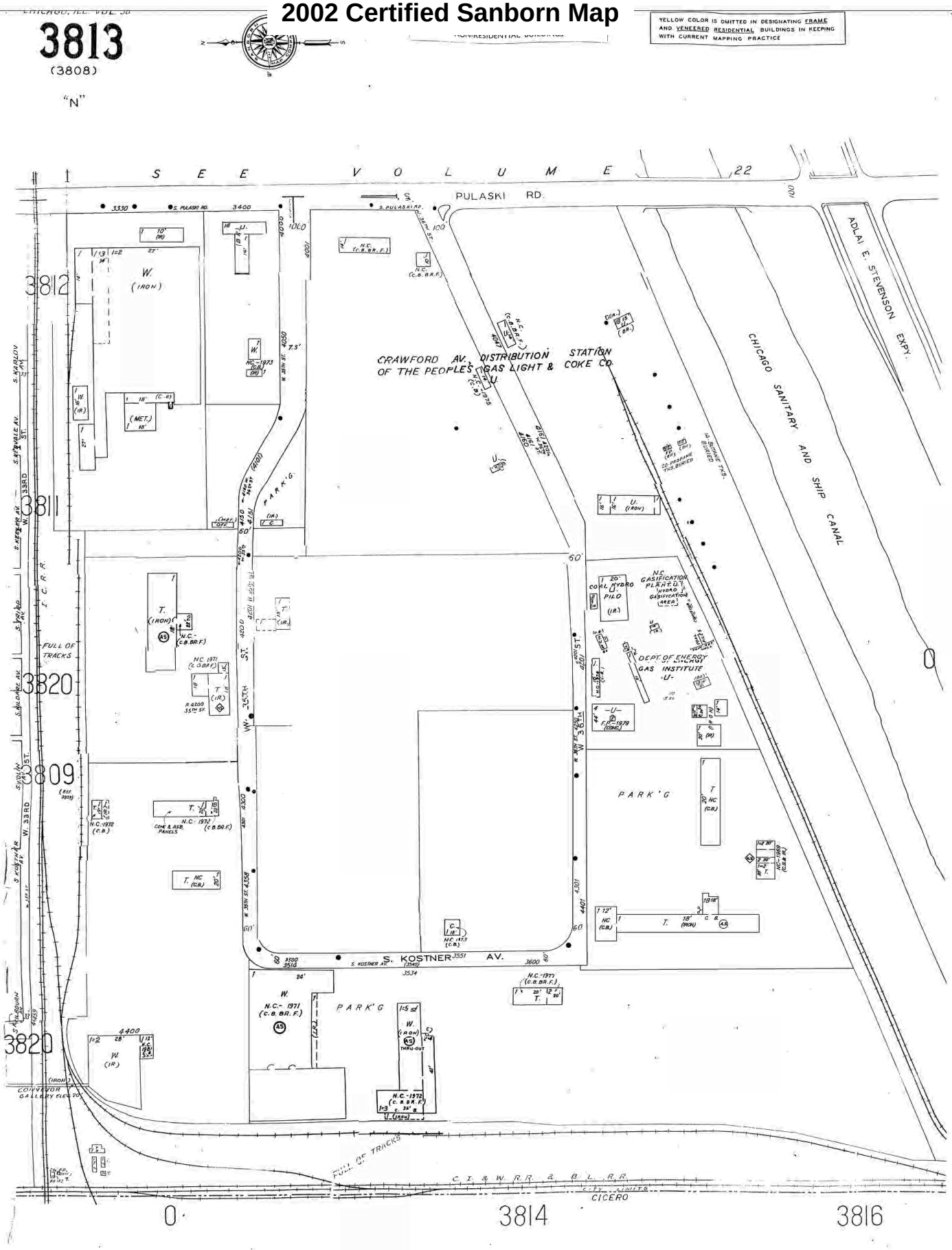
Certification #	16D5-42FC-AE8F

Copyright: 2004

SCALE 200 FT TO ONE INCH

2002 Certified Sanborn Map



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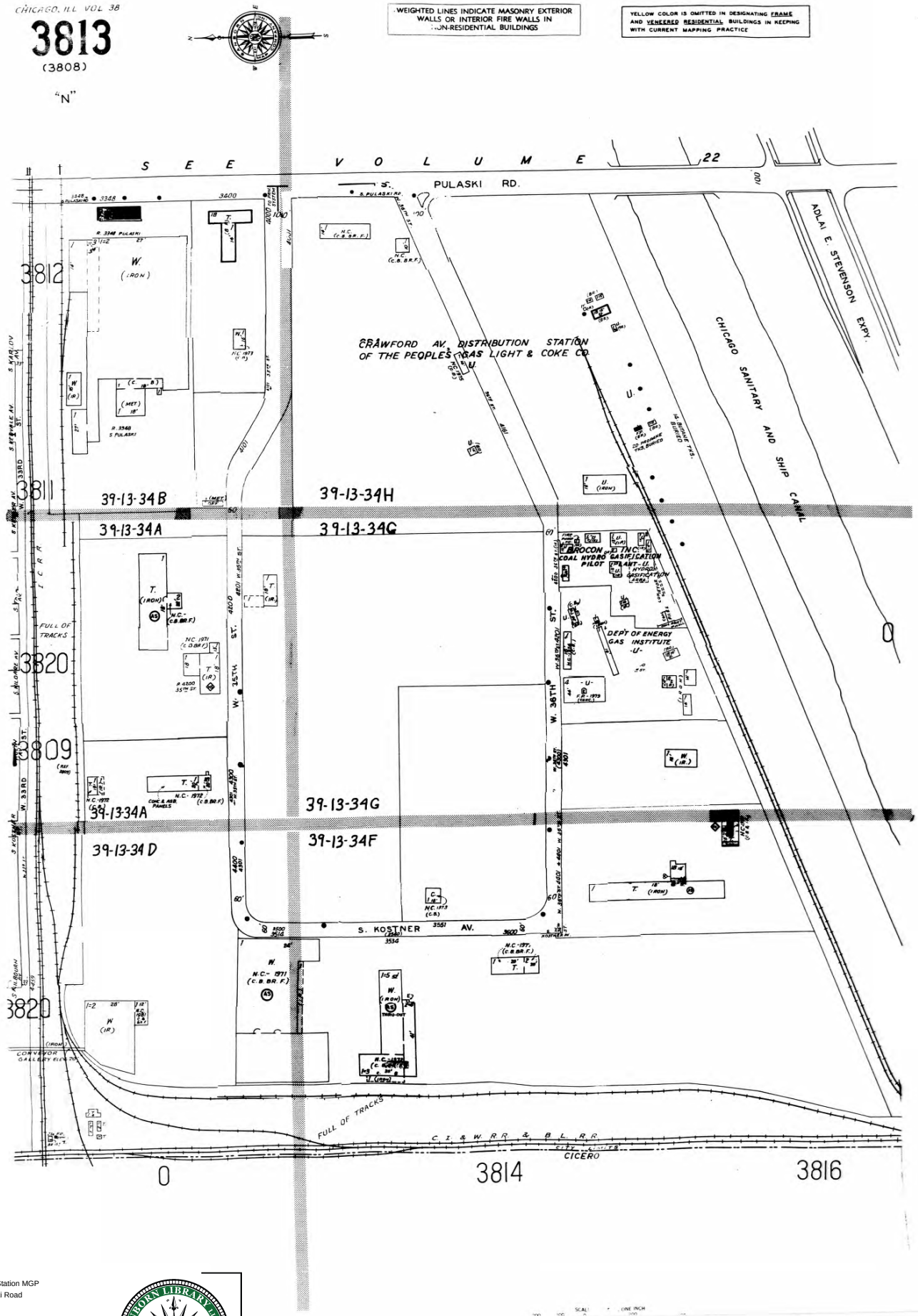
SCALE 200 FT TO ONE INCH

1992 Certified Sanborn Map



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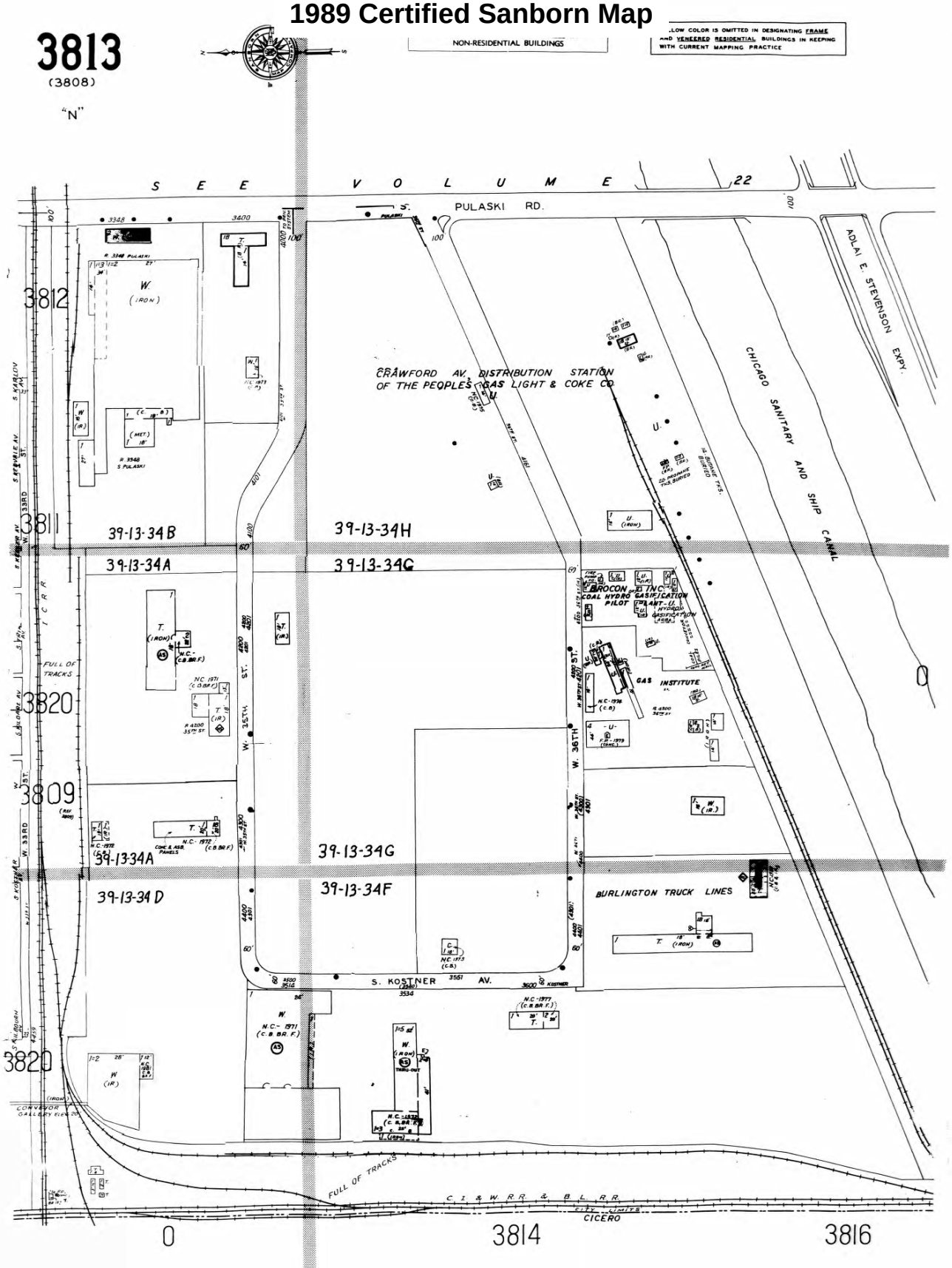

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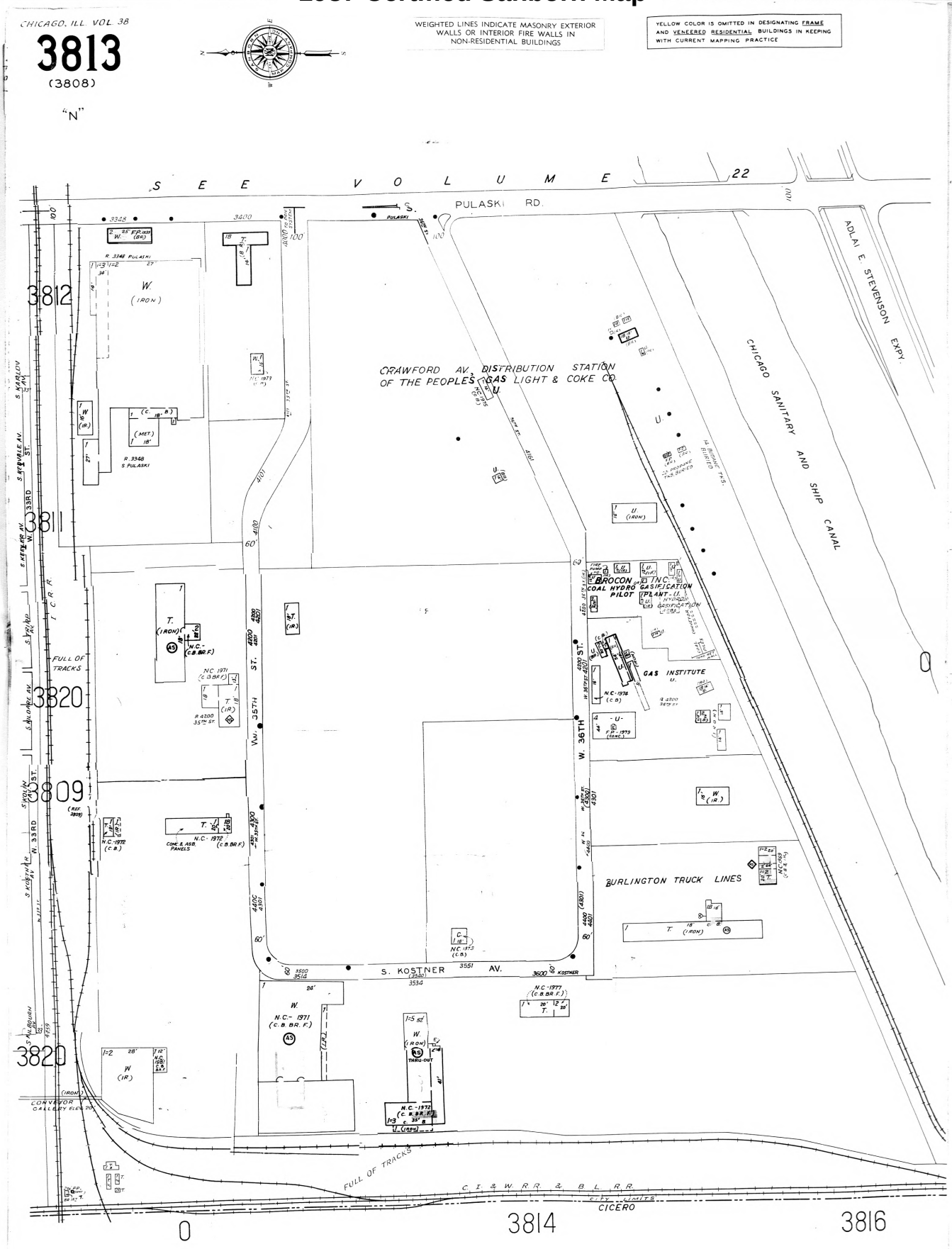

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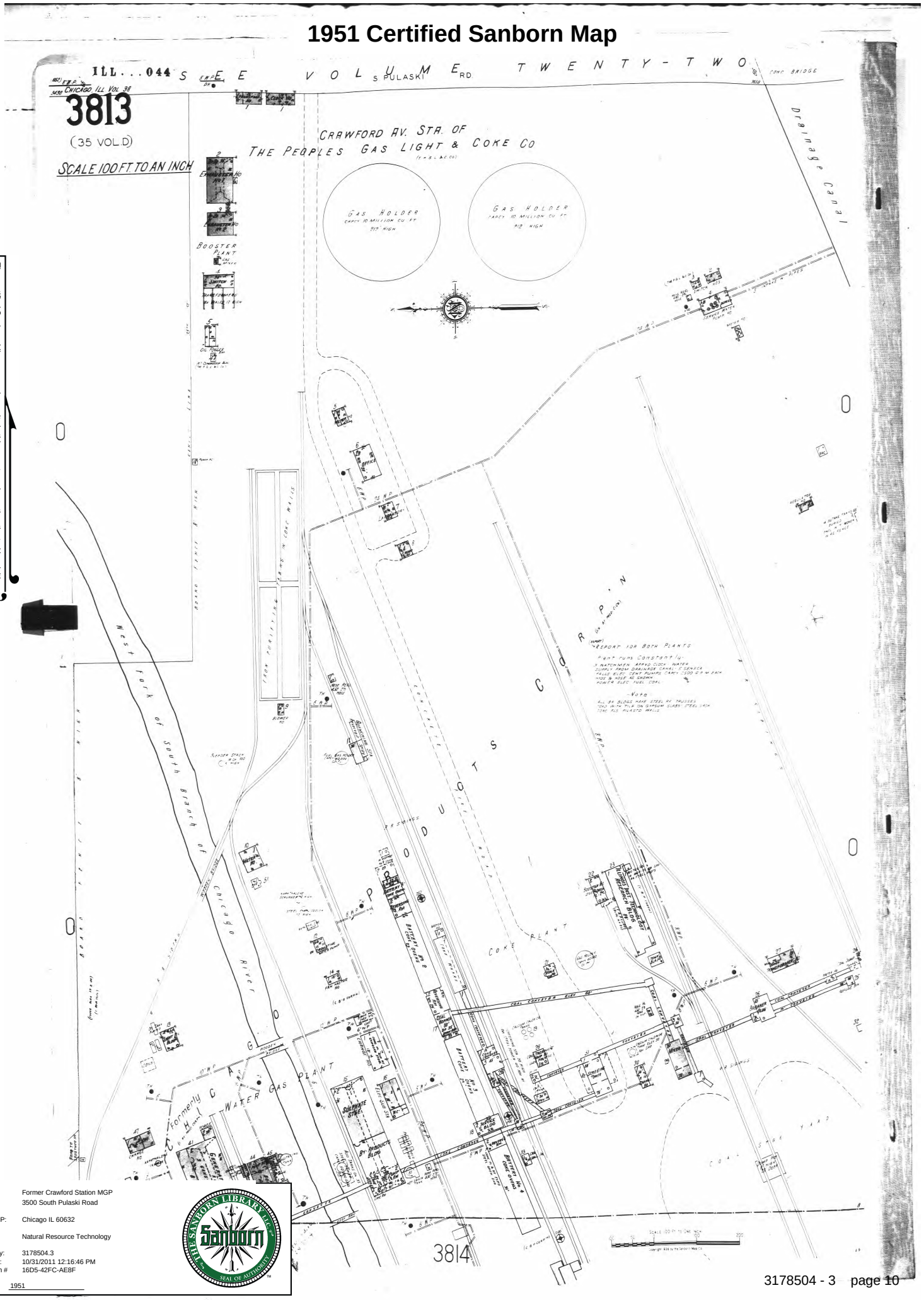

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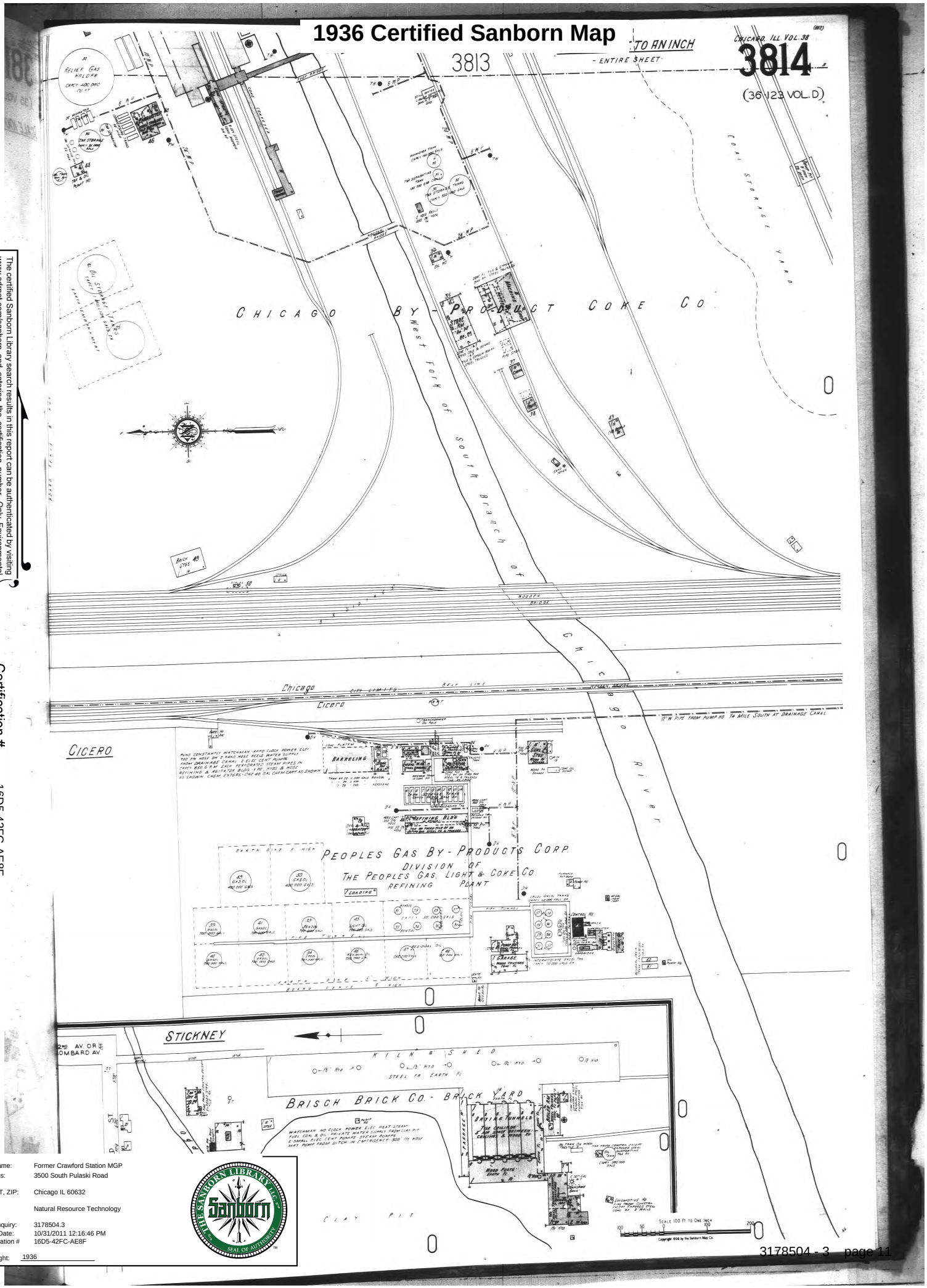

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Former Crawford Station MGP
3500 South Pulaski Road
Chicago, IL 60632

Inquiry Number: 3178504.4
October 04, 2011

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Milford, CT 06461
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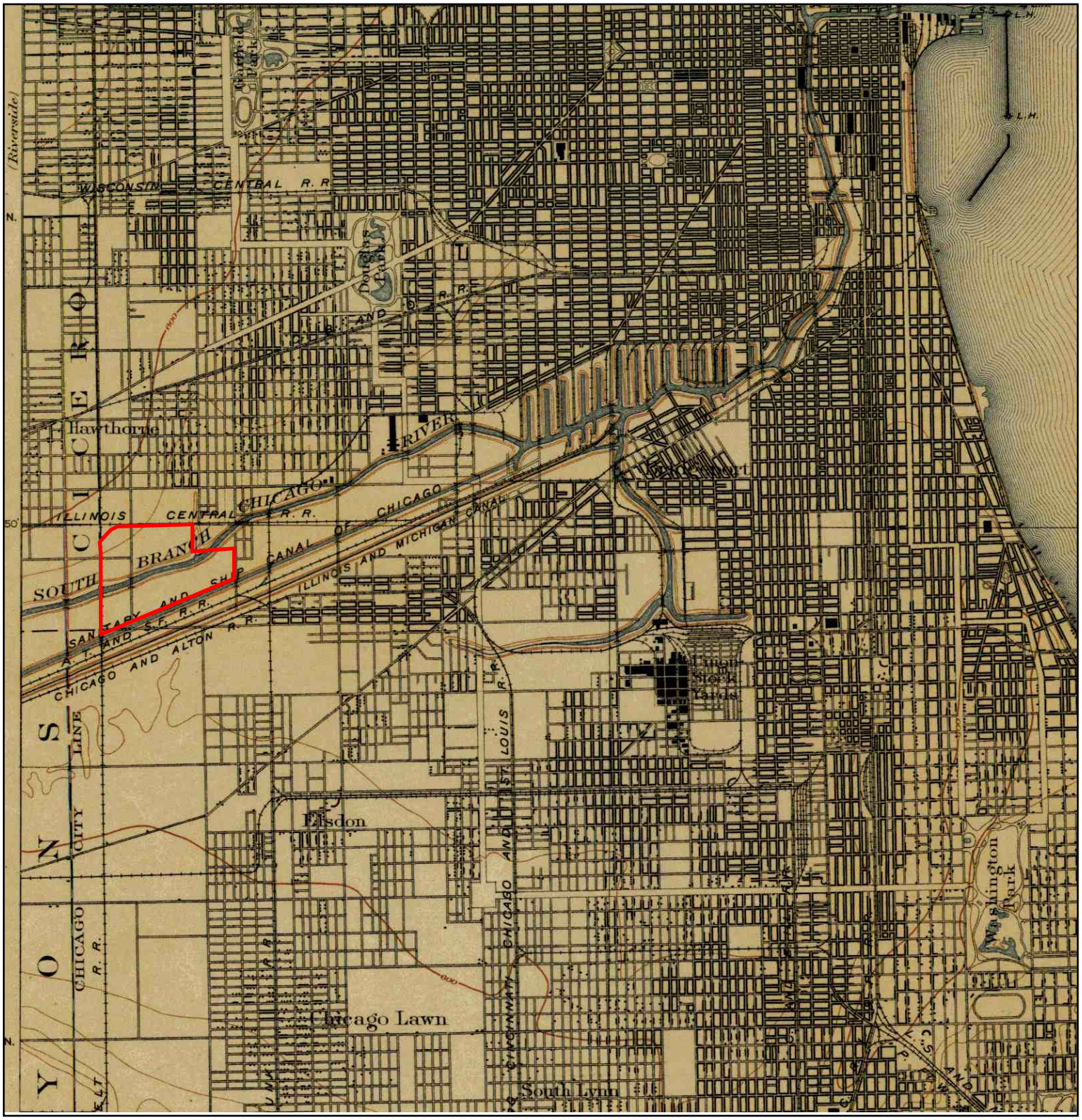
Historical Topographic Map



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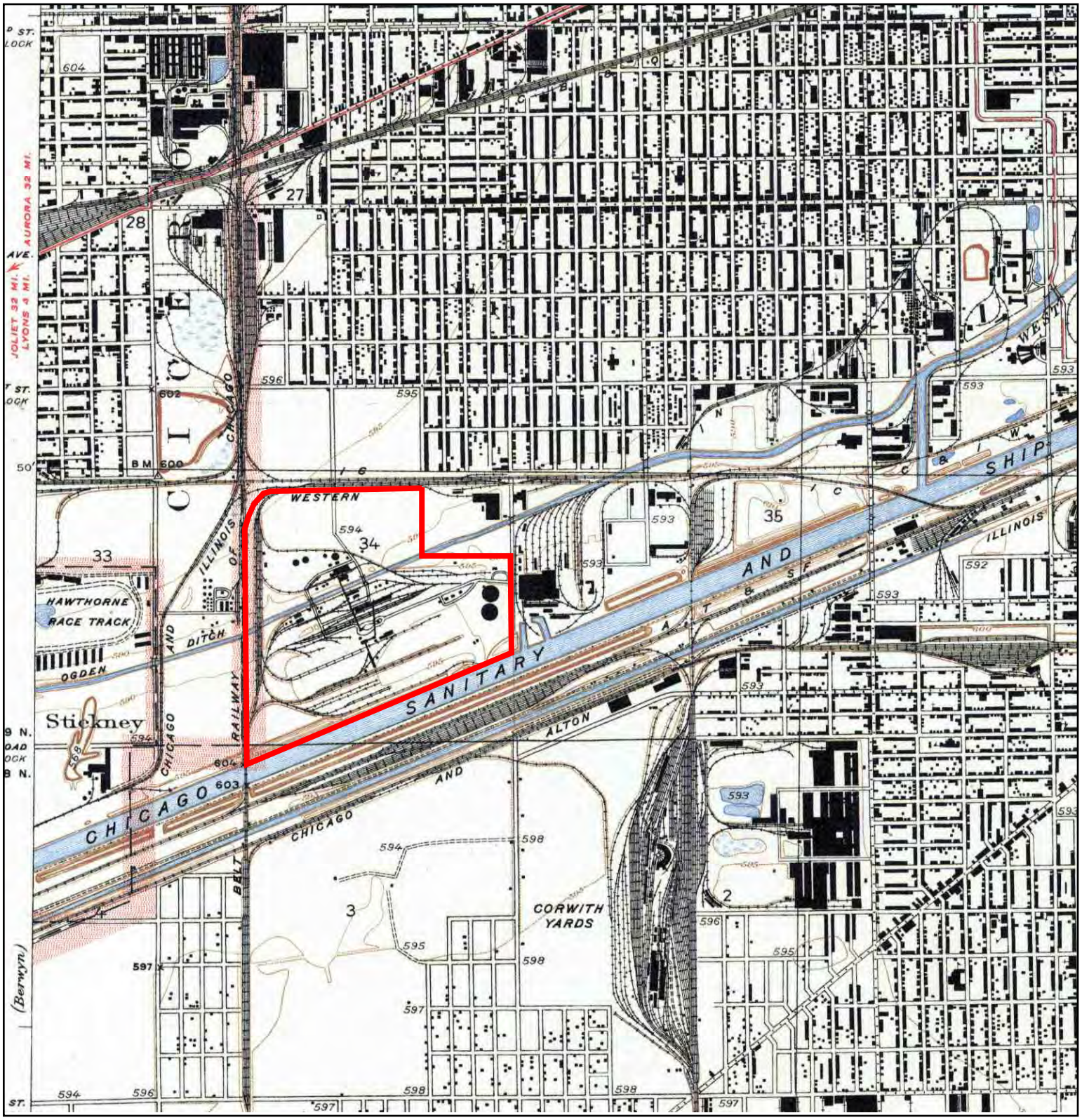
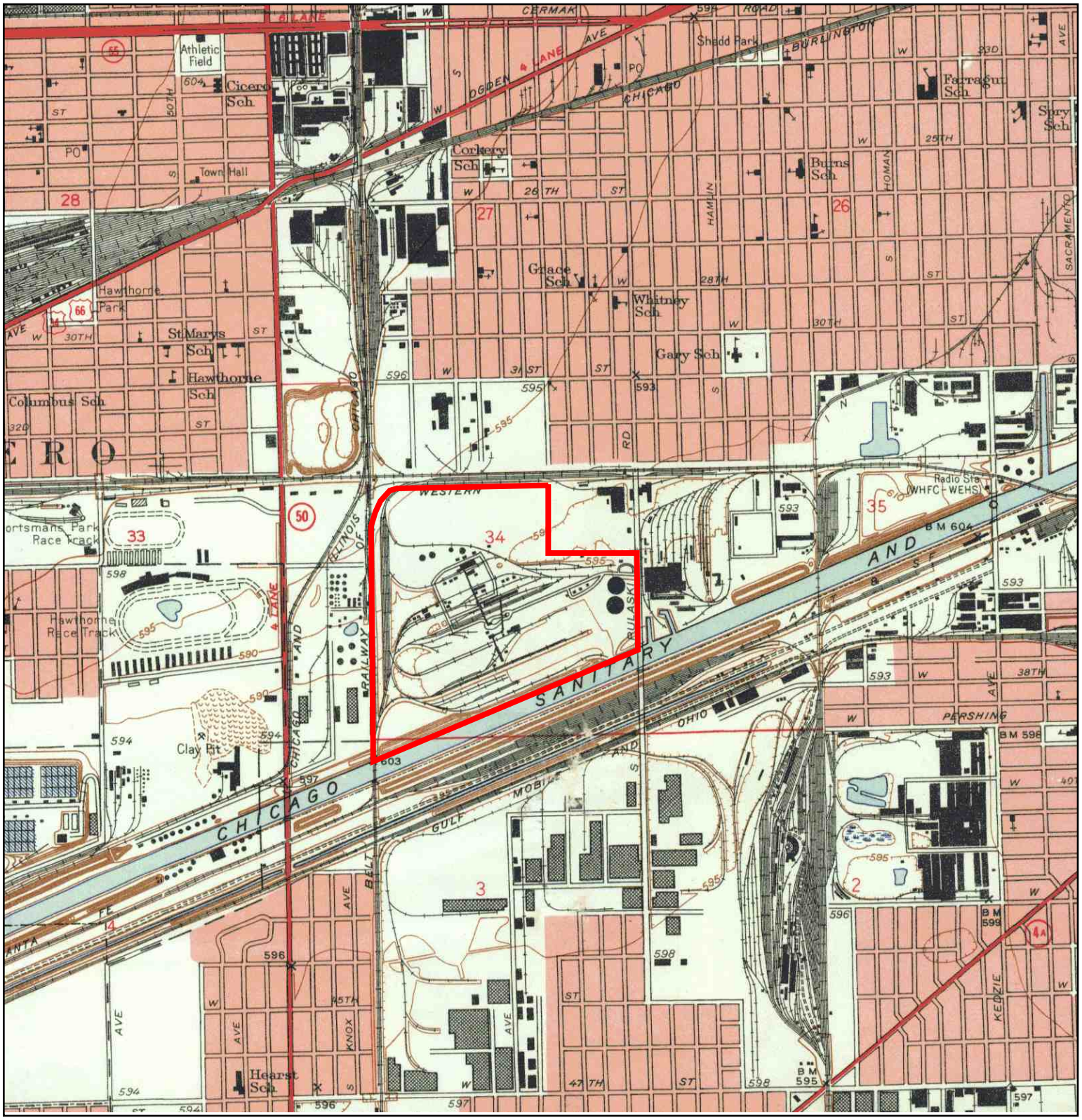
Historical Topographic Map



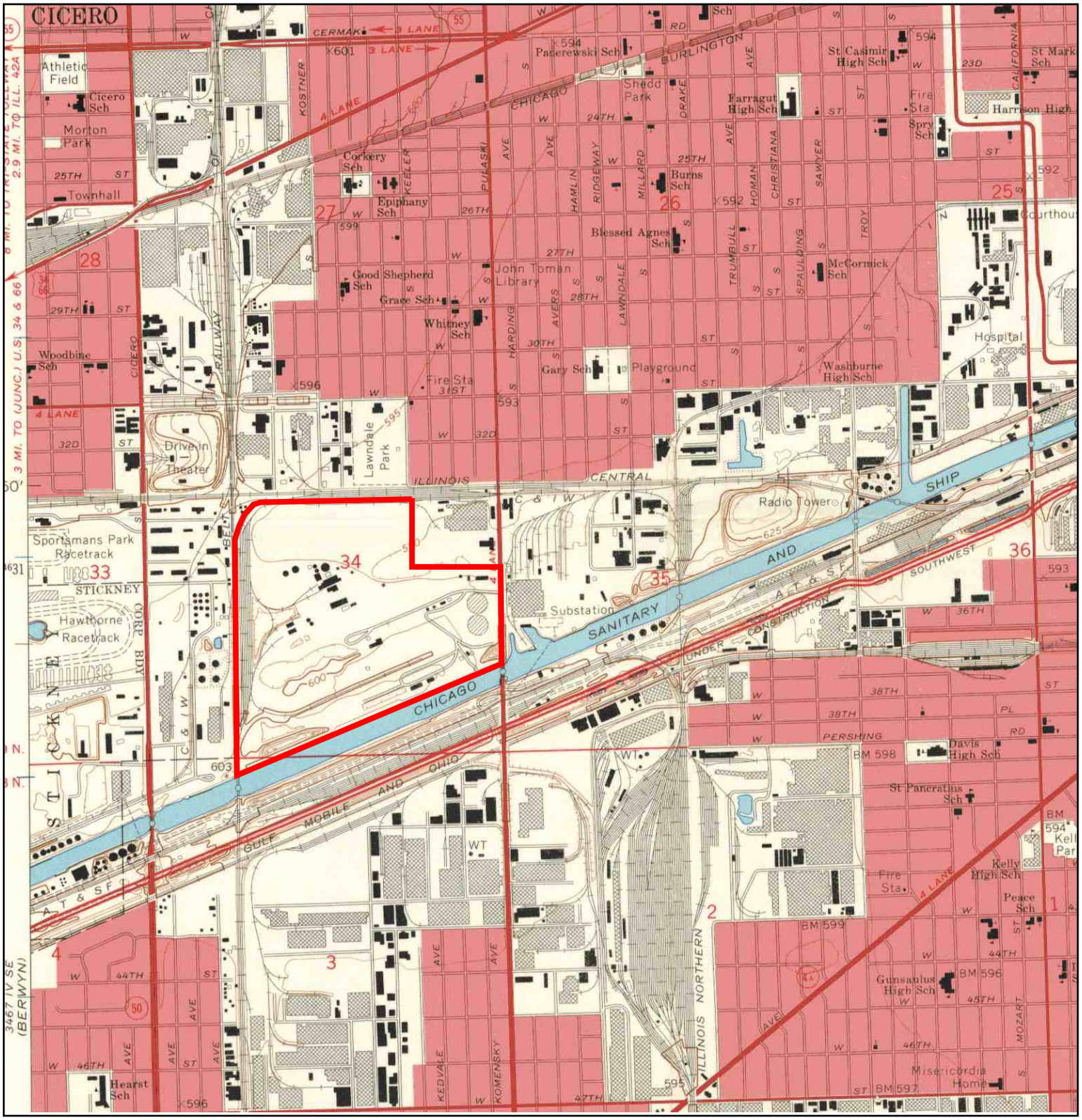
N	TARGET QUAD NAME: ENGLEWOOD MAP YEAR: 1929 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



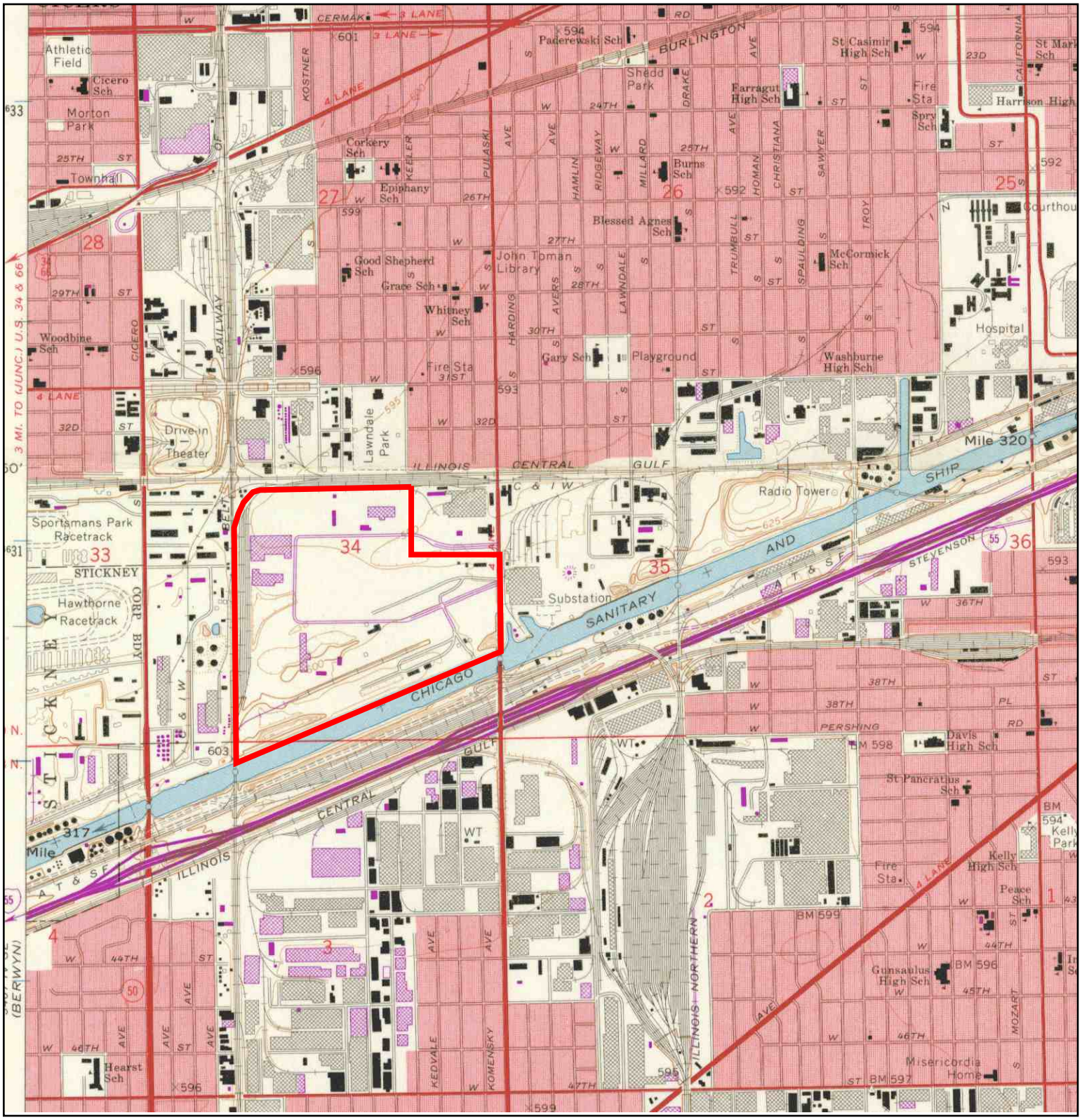
N	TARGET QUAD NAME: CHICAGO VICINITY 2B MAP YEAR: 1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



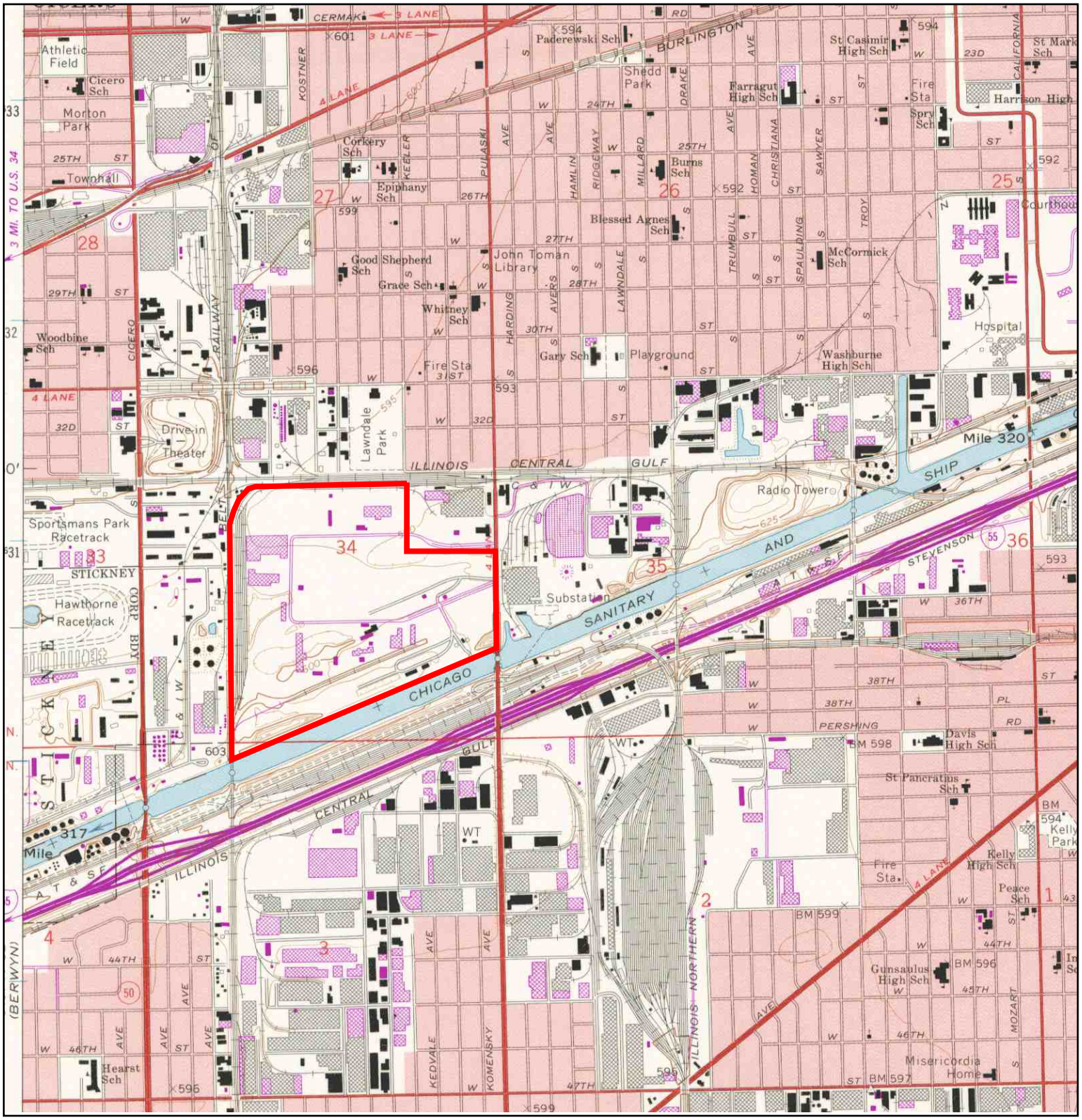
N	**TARGET QUAD** NAME: ENGLEWOOD MAP YEAR: 1963 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



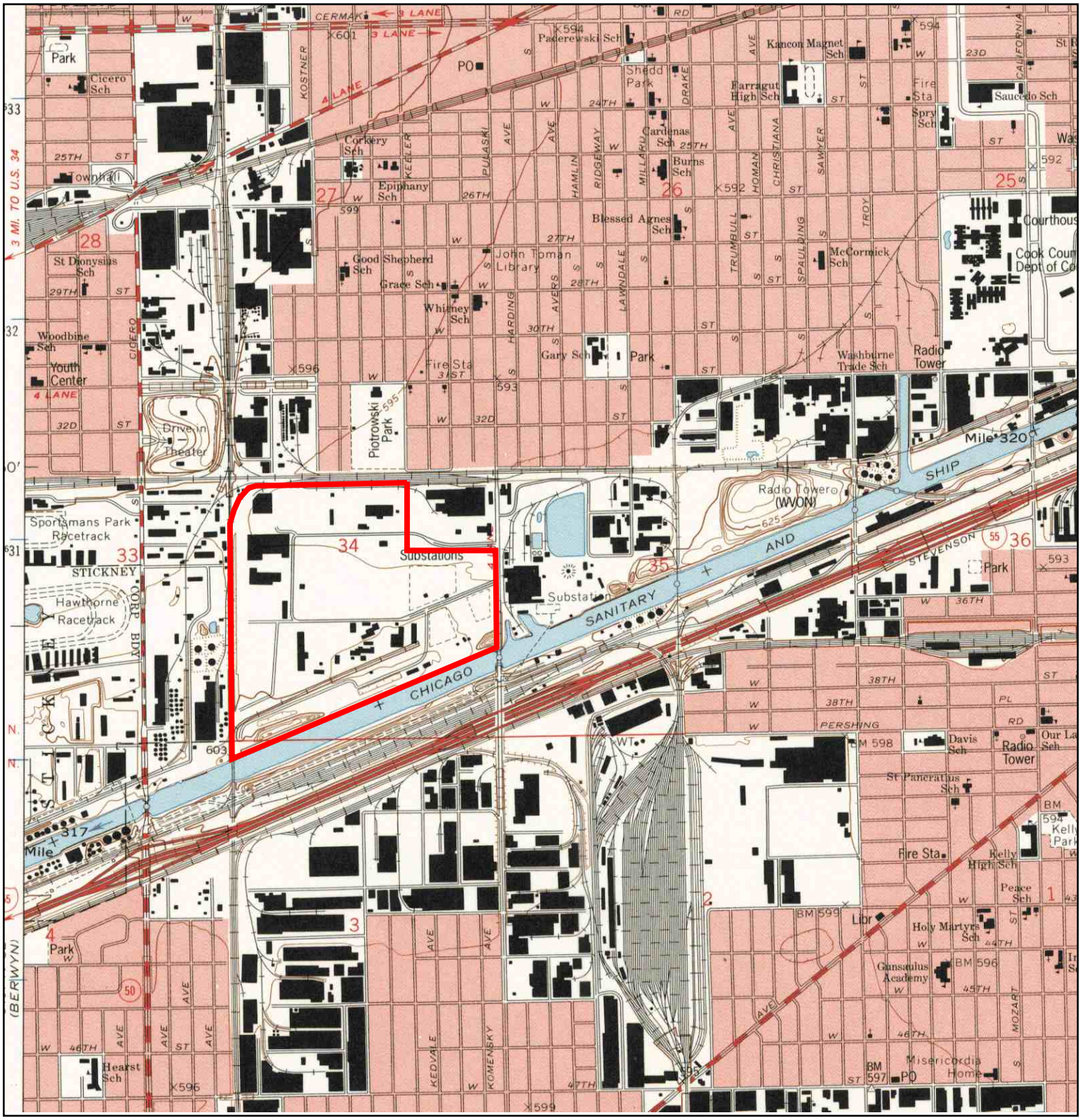
N	TARGET QUAD NAME: ENGLEWOOD MAP YEAR: 1972 PHOTOREVISED:1963 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



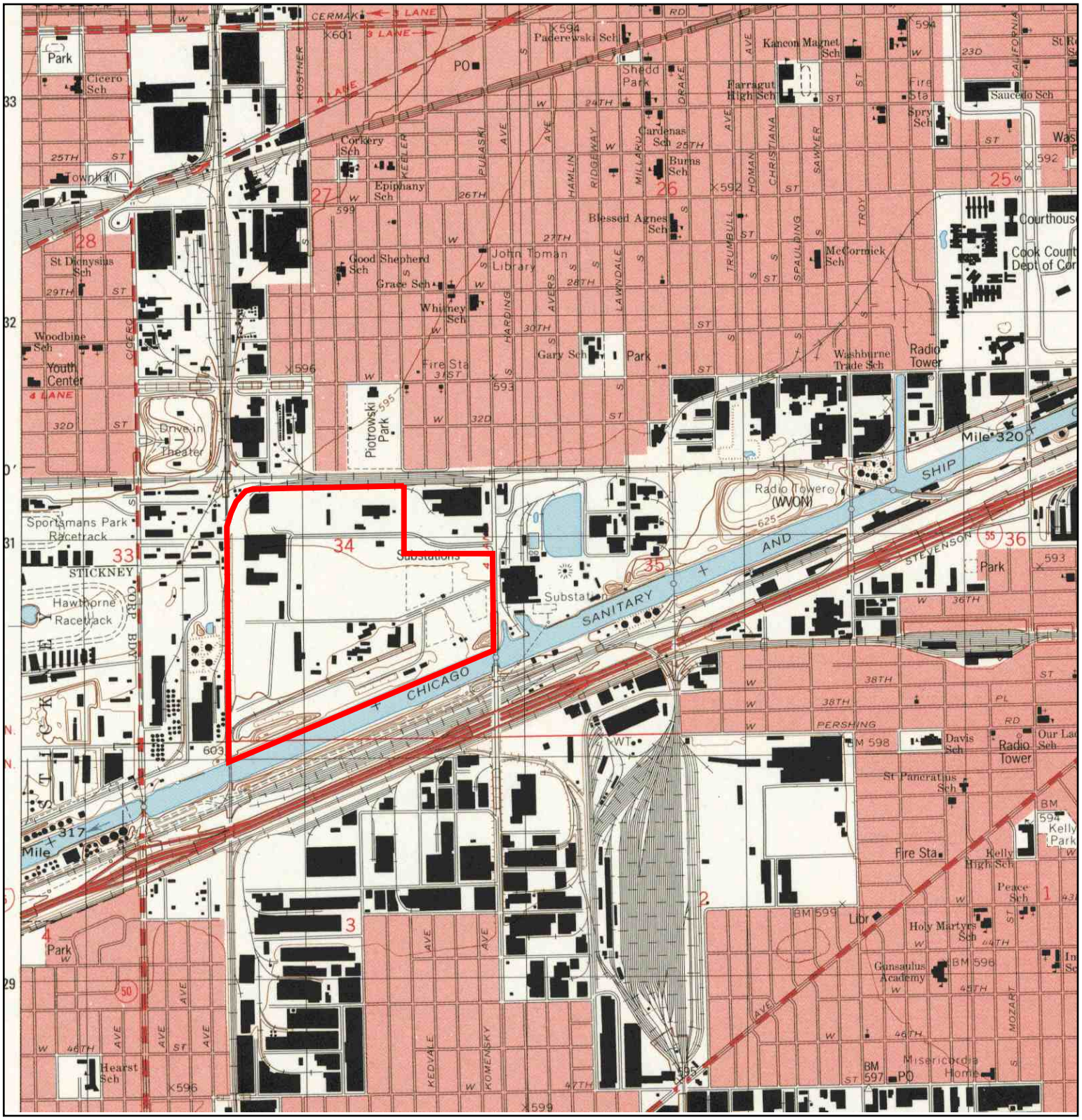
N	TARGET QUAD NAME: ENGLEWOOD MAP YEAR: 1980 PHOTOREVISED:1963 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



N	TARGET QUAD NAME: ENGLEWOOD MAP YEAR: 1993 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

Historical Topographic Map



N	TARGET QUAD NAME: ENGLEWOOD MAP YEAR: 1997 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Former Crawford Station MGP ADDRESS: 3500 South Pulaski Road Chicago, IL 60632 LAT/LONG: 41.8296 / -87.7307	CLIENT: Natural Resource Technology CONTACT: Ronald J. Horan INQUIRY#: 3178504.4 RESEARCH DATE: 10/04/2011

APPENDIX A2

EDR REPORT

Former Crawford Station MGP
3500 South Pulaski Road
Chicago, IL 60632

Inquiry Number: 3178504.2s
October 04, 2011

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
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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

3500 SOUTH PULASKI ROAD
CHICAGO, IL 60632

COORDINATES

Latitude (North):	41.829600 - 41˚ 49' 46.6''
Longitude (West):	87.730700 - 87˚ 43' 50.5''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	439322.1
UTM Y (Meters):	4630902.0
Elevation:	594 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	41087-G6 ENGLEWOOD, IL
Most Recent Revision:	1997
West Map:	41087-G7 BERWYN, IL
Most Recent Revision:	1998

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2005, 2006, 2007
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 7 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
COM ED CRAWFORD STATION 3500 S PULASKI RD CHICAGO, IL 60623	HWAR	N/A
COMMONWEALTH EDISON 3500 S PULASKI RD CHICAGO, IL 60623	RCRA-NonGen FINDS LUST NFA/NFR Letter: 03/16/1994 NFA/NFR Letter: 03/16/1994	ILD984902072
PEOPLES GAS CRAWFORD STATION FORM 3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 606 CHICAGO, IL 60623	ICIS	N/A

EXECUTIVE SUMMARY

COM ED CRAWFORD STATION 3500 S PULASKI RD CHICAGO, IL 60623	FINDS	N/A
PEOPLES GAS CRAWFORD STATION FORM 3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO, IL 60623	CERCLIS	ILN000510192
PEOPLES GAS CRAWFORD STATION FORM 3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO, IL 60623	FINDS	N/A

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:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Available Disposal for Solid Waste in Illinois - Solid Waste Landfills Subject to State Surcharge

EXECUTIVE SUMMARY

LF SPECIAL WASTE..... Special Waste Site List
CCDD..... Clean Construction or Demolition Debris

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Municipal Brownfields Redevelopment Grant Program Project Descriptions

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
CDL..... Meth Drug Lab Site Listing
US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information
LUCIS..... Land Use Control Information System

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... State spills

Other Ascertainable Records

DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System

EXECUTIVE SUMMARY

TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
RAATS	RCRA Administrative Action Tracking System
UIC	Underground Injection Wells
NPDES	A Listing of Active Permits
DRYCLEANERS	Illinois Licensed Drycleaners
AIRS	AIRS
TIER 2	Tier 2 Information Listing
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
COAL ASH DOE	Sleam-Electric Plan Operation Data
PIMW	Potentially Infectious Medical Waste
FINANCIAL ASSURANCE	Financial Assurance Information Listing

EDR PROPRIETARY RECORDS

EDR Proprietary Records

EDR Historical Auto Stations	EDR Proprietary Historic Gas Stations

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.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System 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.

A review of the CERCLIS list, as provided by EDR, and dated 02/25/2011 has revealed that there are 2 CERCLIS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DOUBLE A METALS INC	***3321 S PULASKI RD***	***N 1/8 - 1/4 (0.194 mi.)***	***L54***	***92***
NORTHWESTERN PLATING WORKS	3114 SOUTH KOLIN AVE.	N 1/4 - 1/2 (0.262 mi.)	X89	161

Federal CERCLIS NFRAP site List

CERC-NFRAP: 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.

A review of the CERC-NFRAP list, as provided by EDR, and dated 02/25/2011 has revealed that there are 3 CERC-NFRAP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
A & B CONTAINER	4250 SO KNOX AVE	S 1/4 - 1/2 (0.403 mi.)	AA109	175
FLINT INK CORP	***4101 S PULASKI RD***	***SSE 1/4 - 1/2 (0.482 mi.)***	***124***	***188***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MOBIL OIL CORPORATION CICERO L	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q62***	***113***

Federal RCRA CORRACTS facilities list

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 03/09/2011 has revealed that there are 3 CORRACTS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROCK TENN CO	***4200 S PULASKI RD***	***SSE 1/2 - 1 (0.583 mi.)***	***130***	***199***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MOBIL OIL CORPORATION CICERO L	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q62***	***113***
KOPPERS INC	***3900 S LARAMIE AVE***	***W 1/2 - 1 (0.757 mi.)***	***131***	***209***

EXECUTIVE SUMMARY

Federal RCRA generators list

RCRA-LQG: 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. 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). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/15/2011 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MOBIL OIL CORPORATION CICERO L	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q62***	***113***

RCRA-SQG: 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. 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). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/15/2011 has revealed that there are 12 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INSTITUTE OF GAS TECHNOLOGY	***4201 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***C10***	***21***
URBAN INVESTMENT RESEARCH CORP	4201 W 36TH ST STE 320	0 - 1/8 (0.000 mi.)	C12	24
CHICAGO COLD STORAGE COMPANY	***3534 S KOSTNER***	***0 - 1/8 (0.000 mi.)***	***D13***	***25***
BRIDGE TERMINAL TRANSPORT INC	***3600 S KOSTNER***	***0 - 1/8 (0.000 mi.)***	***D14***	***27***
NATIONS WAY TRANSPORT	***4359 W 36TH ST***	***0 - 1/8 (0.000 mi.)***	***E23***	***39***
MIDWEST GENERATION CRAWFORD	3501 S PULASKI RD	0 - 1/8 (0.001 mi.)	H33	56
BLITZ BODY	***3330 S PULASKI***	***N 1/8 - 1/4 (0.179 mi.)***	***L52***	***89***
SCIENTIFIC CONTROL LABORATORIE	3158 S KOLIN AVE	N 1/8 - 1/4 (0.207 mi.)	N55	101
MODERN PROCESS EQUIPMENT	***3150 S KOLIN AVE***	***N 1/8 - 1/4 (0.217 mi.)***	***N56***	***102***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DONGARY INVESTMENTS INC	***4300 W 35TH PL***	***0 - 1/8 (0.000 mi.)***	***F28***	***46***
NU TEMP	***3348 S PULASKI***	***N 1/8 - 1/4 (0.156 mi.)***	***L47***	***83***
CITGO PETROLEUM CORP	***3737 S. CICERO AVE.***	***W 1/8 - 1/4 (0.246 mi.)***	***P66***	***133***

RCRA-CESQG: 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. 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.

A review of the RCRA-CESQG list, as provided by EDR, and dated 06/15/2011 has revealed that there are 6 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROAD LINK	4201 W 36TH ST	0 - 1/8 (0.000 mi.)	C19	32

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PEOPLES GAS: CRAWFORD STATION	***4161 W 36TH ST***	***0 - 1/8 (0.000 mi.)***	***C20***	***34***
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***

Lower Elevation	Address	Direction / Distance	Map ID	Page
VITRAN EXPRESS	***4200 W 35TH PL***	***0 - 1/8 (0.000 mi.)***	***F24***	***41***
VITRAN EXPRESS	4200 W 35TH PLACE C	0 - 1/8 (0.000 mi.)	F26	43
COM ED WEST TECH FAC	***3400 S PULASKI***	***N 0 - 1/8 (0.094 mi.)***	***J38***	***63***

State- and tribal - equivalent CERCLIS

SSU: The State Response Action Program database identifies the status of all sites under the responsibility of the Illinois EPA's State Sites Unit.

A review of the SSU list, as provided by EDR, and dated 08/16/2011 has revealed that there are 3 SSU sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BP AMOCO 26996	***3100 S CICERO AVE-B***	***NW 1/4 - 1/2 (0.426 mi.)***	***AF115***	***179***
HOMAN CORP	***3650 S HOMAN AVE***	***E 1/2 - 1 (0.774 mi.)***	***132***	***223***
OLYMPIC OIL, LTD.	***5000 WEST 41ST STREET***	***W 1/2 - 1 (0.840 mi.)***	***133***	***224***

State and tribal landfill and/or solid waste disposal site lists

IL NIPC: 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 that previously had never been identified largely because, prior to 1971, there was no obligation to register such sites. The data come from the Northeastern Illinois Planning Commission's Solid Waste Landfill Inventory.

A review of the IL NIPC list, as provided by EDR, and dated 08/01/1988 has revealed that there is 1 IL NIPC site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CITIES SERVICE OIL		W 1/8 - 1/4 (0.241 mi.)	P59	107

State and tribal leaking storage tank lists

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 08/31/2011 has revealed that there are 53 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SARA LEE BAKERY NFA/NFR Letter: 06/28/1996	3535 SOUTH KOSTNER AVE.	0 - 1/8 (0.000 mi.)	D17	32

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DONGARY INVESTMENTS	4300 WEST 35TH ST.	0 - 1/8 (0.000 mi.)	G25	43
R & L CARRIERS	***4359 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***E30***	***53***
SSCI JOINT VENTURE	4359 WEST 36TH ST.	0 - 1/8 (0.000 mi.)	E31	54
NFA/NFR Letter: 07/28/2000				
W.E.S. ENTERPRISES INC.	3223 SOUTH KOLIN AVE.	N 0 - 1/8 (0.123 mi.)	K43	70
NFA/NFR Letter: 08/13/1997				
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***
NFA/NFR Letter: 10/04/1995				
GENUINE PARTS CO.	3900 SOUTH CICERO AVE.	W 1/8 - 1/4 (0.248 mi.)	R68	136
NFA/NFR Letter: 07/08/1998				
GLEASON CRANE	3401 SOUTH CICERO	W 1/4 - 1/2 (0.257 mi.)	U76	145
DNJ TRANSPORTATION, INC.	3411 SOUTH CICERO	W 1/4 - 1/2 (0.257 mi.)	U79	151
NFA/NFR Letter: 10/01/2002				
ARTHUR E. NELSON CO.	3435 SOUTH CICERO AVE	W 1/4 - 1/2 (0.258 mi.)	U81	153
NFA/NFR Letter: 02/22/2008				
ROADCO TRANSPORTATION	3417 SOUTH CICERO AVENU	W 1/4 - 1/2 (0.258 mi.)	U83	155
NFA/NFR Letter: 08/04/2006				
SIGNAL DELIVERY SERVICE	3505 SOUTH CICERO AVE.	W 1/4 - 1/2 (0.258 mi.)	V84	157
WESTERN INDUSTRIES	3501 SOUTH CICERO AVE.	W 1/4 - 1/2 (0.258 mi.)	V85	157
HOFF BROTHERS CARTAGE, INC.	3475 SOUTH CICERO AVE	W 1/4 - 1/2 (0.258 mi.)	V86	158
NFA/NFR Letter: 04/20/1998				
UNIVERSAL EDIBLE OILS	4421 WEST 31ST	N 1/4 - 1/2 (0.260 mi.)	W87	159
NFA/NFR Letter: 04/21/2005				
NFA/NFR Letter: 04/21/2005				
TURKS MOTOR EXPRESS/RS MGT.	3333 SOUTH CICERO AVE.	WNW 1/4 - 1/2 (0.264 mi.)	Y90	162
NFA/NFR Letter: 10/04/2000				
JONES TRUCKING	3311 SOUTH CICERO AVE	WNW 1/4 - 1/2 (0.274 mi.)	Y92	164
EISERMAN, MICHAEL H.	4358 WEST 31ST ST.	N 1/4 - 1/2 (0.284 mi.)	X95	167
ARTHUR E. NELSON, ESTATE OF	3905 SOUTH PULASKI RD.	SSE 1/4 - 1/2 (0.288 mi.)	96	167
NFA/NFR Letter: 12/08/1997				
CESCOE	3939 KARLOV	SSE 1/4 - 1/2 (0.293 mi.)	97	168
NFA/NFR Letter: 01/15/2008				
SOUTH END CARTAGE	4222 SOUTH KNOX	S 1/4 - 1/2 (0.380 mi.)	AA101	171
WARREN OIL CO.	4243 SOUTH KNOX	S 1/4 - 1/2 (0.396 mi.)	AA104	172
NFA/NFR Letter: 01/22/2010				
WARREN OIL CO.	4242 SOUTH KNOX	S 1/4 - 1/2 (0.397 mi.)	AA105	173
NFA/NFR Letter: 12/23/2009				
DEARBORNE WHOLESALE GROCERS	4040 WEST 40TH	SSE 1/4 - 1/2 (0.400 mi.)	AD108	174
NFA/NFR Letter: 03/19/1991				
DOMINICK'S FINER FOODS	4404 WEST 42ND ST.	SSE 1/4 - 1/2 (0.421 mi.)	AE110	175
NFA/NFR Letter: 12/20/1993				
BP PRODUCTS NORTH AMERICA #188	3100 SOUTH CICERO AVE	NW 1/4 - 1/2 (0.426 mi.)	AF114	178
NFA/NFR Letter: 04/04/2002				
MARIGUAS AUTO REPAIR	3314 SOUTH LAWNDALE ST.	ENE 1/4 - 1/2 (0.428 mi.)	AH117	181
MRC POLYMERS	3307 SOUTH LAWNDALE	ENE 1/4 - 1/2 (0.433 mi.)	AH119	183
NFA/NFR Letter: 01/02/2007				
WESTERN SCREW MACHINE PROD. CO	4301 SOUTH KNOX AVE.	S 1/4 - 1/2 (0.450 mi.)	AI121	185
NFA/NFR Letter: 03/03/1994				

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FISH FURNITURE NFA/NFR Letter: 12/01/1992	4242 WEST 42ND PL.	SSE 1/4 - 1/2 (0.481 mi.)	AJ123	187
QUALITY SAW & SEAL NFA/NFR Letter: 12/19/2000	4333 SOUTH KNOX AVE.	S 1/4 - 1/2 (0.489 mi.)	AI125	192
DURACK, LISA NFA/NFR Letter: 12/19/2000	4333 SOUTH KNOX	S 1/4 - 1/2 (0.489 mi.)	AI126	192
4220 S KILDARE LLC NFA/NFR Letter: 11/30/1998 NFA/NFR Letter: 11/30/1998 **Additional key fields are available in the Map Findings section*	***4220 S KILDARE BLVD***	***SSE 1/4 - 1/2 (0.490 mi.)***	***AJ127***	***193***
MIDAS INTERNATIONAL NFA/NFR Letter: 07/31/1995	***4235 W 42ND PL***	***SSE 1/4 - 1/2 (0.491 mi.)***	***AJ128***	***196***
PLAZA INN CICERO NFA/NFR Letter: 11/18/2008	***3026 SOUTH CICERO AVENU***	***NW 1/4 - 1/2 (0.498 mi.)***	***129***	***198***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DONGARY INVESTMENTS INC NFA/NFR Letter: 07/12/1996 NFA/NFR Letter: 03/29/1994	***4300 W 35TH PL***	***0 - 1/8 (0.000 mi.)***	***F28***	***46***
KERR MCGEE, REF TRIANGLE DIVIS	***3741 SOUTH PULASKI RD.***	***E 0 - 1/8 (0.015 mi.)***	***I37***	***62***
WILLETT TRUCKING	3400 SOUTH PULASKI RD.	N 0 - 1/8 (0.094 mi.)	J40	66
NUTEMP INC. NFA/NFR Letter: 09/16/1999	3348 SOUTH PULASKI RD.	N 1/8 - 1/4 (0.157 mi.)	L48	85
MOBIL CICERO LUBE PLANT	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q60***	***107***
CITGO PETROLEUM CORP NFA/NFR Letter: 11/25/1997	***3737 S. CICERO AVE.***	***W 1/8 - 1/4 (0.246 mi.)***	***P66***	***133***
ROLLINS LEASING CORP. NFA/NFR Letter: 02/15/2000	3800 SOUTH CICERO AVE	W 1/8 - 1/4 (0.247 mi.)	Q67	136
PASELLA, JOHN NFA/NFR Letter: 03/10/2010	3750 SOUTH CICERO AVE.	W 1/8 - 1/4 (0.248 mi.)	S71	140
CHURCH OF LATTER DAY SAINTS NFA/NFR Letter: 09/23/2004	3250 SOUTH PULASKI	ENE 1/4 - 1/2 (0.254 mi.)	T74	144
MOJICI, HUMBERTO NFA/NFR Letter: 01/21/2009	3249 PULASKI RD.	ENE 1/4 - 1/2 (0.256 mi.)	T75	144
M & S TRANSPORT INC NFA/NFR Letter: 06/04/2003	***3738 SOUTH CICERO AVENU***	***W 1/4 - 1/2 (0.257 mi.)***	***S78***	***147***
3101-11 SOUTH PULASKI LLC NFA/NFR Letter: 11/05/2008	3105 SOUTH PULASKI AVEN	NE 1/4 - 1/2 (0.363 mi.)	Z99	170
WIERZ, EDWARD NFA/NFR Letter: 07/17/2000	3101 SOUTH PULASKI RD.	NE 1/4 - 1/2 (0.366 mi.)	Z100	170
CHICAGO, CITY OF NFA/NFR Letter: 09/01/2000	3458 SOUTH LAWNDALE AVE	E 1/4 - 1/2 (0.384 mi.)	AB102	171
M.W. POWELL CO. NFA/NFR Letter: 03/03/2010	3445 LAWNDALE	E 1/4 - 1/2 (0.387 mi.)	AB103	172
CHICAGO, CITY OF - GENERAL SER	3400 SOUTH LAWNDALE	ENE 1/4 - 1/2 (0.398 mi.)	AC106	173
F.A.B. TRANSIT	3401 SOUTH LAWNDALE	ENE 1/4 - 1/2 (0.399 mi.)	AC107	174
AMOCO SS #15523	***4247 SOUTH CICERO***	***SSW 1/4 - 1/2 (0.450 mi.)***	***AG122***	***186***

EXECUTIVE SUMMARY

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 09/06/2011 has revealed that there is 1 LUST TRUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
R & L CARRIERS	***4359 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***E30***	***53***

State and tribal registered storage tank lists

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 08/01/2011 has revealed that there are 19 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
COCA-COLA USA DIV OF COCA-COLA	***4301 W 36TH ST***	***0 - 1/8 (0.000 mi.)***	***B8***	***17***
INSTITUTE OF GAS TECHNOLOGY	4201 W 36TH ST	0 - 1/8 (0.000 mi.)	C9	20
TKX COLD STORAGE	3534 KOSTNER AVE FOMER	0 - 1/8 (0.000 mi.)	D15	28
XTRA UBC	3600 S KOSTNER	0 - 1/8 (0.000 mi.)	D21	37
ACE HARDWARE	4300 W 35TH PL DIV OF M	0 - 1/8 (0.000 mi.)	G29	48
R & L CARRIERS	4359 W. 36TH STREET	0 - 1/8 (0.000 mi.)	E32	54
CRAWFORD STATION	3501S PULASKI RD	E 0 - 1/8 (0.008 mi.)	H34	60
W E S ENTERPRISES	***3223 S KOLIN AVE***	***N 0 - 1/8 (0.123 mi.)***	***K42***	***68***
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***
HELDERS MOTOR SER CO	***3201 S KOSTNER AVE***	***N 1/8 - 1/4 (0.153 mi.)***	***46***	***81***
DAVID ARCHITECTURAL METALS INC	3100 S KILBOURN AVE	N 1/8 - 1/4 (0.239 mi.)	O58	106
BERRY BEARING CO	3900 S CICERO AVE	W 1/8 - 1/4 (0.248 mi.)	R69	137
INTERSTATE MATERIAL CORP	4000 S CICERO AVE	W 1/8 - 1/4 (0.248 mi.)	R70	139

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRIANGLE REFINERIES INC	3741 S PULASKI RD	E 0 - 1/8 (0.015 mi.)	I36	61
HINCHCLIFF JR WM & AGNES	3400 S PULASKI RD	N 0 - 1/8 (0.094 mi.)	J39	65
NUTEMP INC	3348 S PULASKI RD	N 1/8 - 1/4 (0.157 mi.)	L50	87
CHICAGO CITY OF	I 55 & PULASKI ROAD BRI	SSE 1/8 - 1/4 (0.158 mi.)	M51	88
MOBIL CICERO LUBE PLANT	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q60***	***107***
CITGO PETROLEUM CORPORATION	3737 S. CICERO AVENUE	W 1/8 - 1/4 (0.246 mi.)	P65	127

State and tribal institutional control / engineering control registries

ENG CONTROLS: Sites with Engineering Controls.

A review of the ENG CONTROLS list, as provided by EDR, and dated 07/22/2011 has revealed that there

are 4 ENG CONTROLS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***
CENTRAL SOYA, INC.	***4421 WEST 31ST STREET***	***N 1/4 - 1/2 (0.260 mi.)***	***W88***	***159***
MRC POLYMERS, INC.	***3307 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.430 mi.)***	***AH118***	***182***
JENALICA/P, INC.	***3305 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.434 mi.)***	***AH120***	***184***

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 07/22/2011 has revealed that there are 5 INST CONTROL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FORMER COCA-COLA PTO	***4301 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***B7***	***15***
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***
CENTRAL SOYA, INC.	***4421 WEST 31ST STREET***	***N 1/4 - 1/2 (0.260 mi.)***	***W88***	***159***
MRC POLYMERS, INC.	***3307 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.430 mi.)***	***AH118***	***182***
JENALICA/P, INC.	***3305 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.434 mi.)***	***AH120***	***184***

State and tribal voluntary cleanup sites

SRP: Illinois Environmental Protection Agency, Site Remediation Program Database

A review of the SRP list, as provided by EDR, and dated 07/22/2011 has revealed that there are 13 SRP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FORMER COCA-COLA PTO	***4301 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***B7***	***15***
PEOPLES GAS LIGHT & COKE CO. -	***4161 WEST 36TH STREET***	***0 - 1/8 (0.000 mi.)***	***C22***	***38***
BWAY	***3200 S KILBOURN AVE***	***N 1/8 - 1/4 (0.134 mi.)***	***45***	***72***
CENTRAL SOYA, INC.	***4421 WEST 31ST STREET***	***N 1/4 - 1/2 (0.260 mi.)***	***W88***	***159***
NATIONAL JOCKEY CLUB	3311 SOUTH CICERO AVENU	WNW 1/4 - 1/2 (0.274 mi.)	Y91	163
BRIGHTLY GALVANIZED PRODUCTS,	3330 SOUTH CICERO AVENU	WNW 1/4 - 1/2 (0.274 mi.)	Y93	164
DONNA'S DISTRIBUTION	4404 WEST 42ND STREET	SSE 1/4 - 1/2 (0.421 mi.)	AE111	176
BEL-AIR DRIVE-IN THEATRE	3100 CICERO AVENUE	NW 1/4 - 1/2 (0.423 mi.)	AF112	177
SUN CHEMICAL	4000 WEST 40TH STREET	SSE 1/4 - 1/2 (0.427 mi.)	AD116	181
MRC POLYMERS, INC.	***3307 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.430 mi.)***	***AH118***	***182***
JENALICA/P, INC.	***3305 SOUTH LAWNDALE AVE***	***ENE 1/4 - 1/2 (0.434 mi.)***	***AH120***	***184***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MOBIL CICERO LUBE PLANT	***3801 SOUTH CICERO AVENU***	***W 1/8 - 1/4 (0.245 mi.)***	***Q61***	***112***
PAT'S J S AUTOMOTIVE	4219 SOUTH CICERO AVENU	SW 1/4 - 1/2 (0.426 mi.)	AG113	177

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properites addressed by Cooperative Agreement Recipients and Brownfields properties addressed by Targeted Brownfields Assessments

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/27/2011 has revealed that there are 5 US BROWNFIELDS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
3401 S CICERO	3401 S CICERO	W 1/4 - 1/2 (0.257 mi.)	U77	145
3435 S CICERO	3435 S CICERO	W 1/4 - 1/2 (0.258 mi.)	U80	151
3419 S CICERO	3419 S CICERO	W 1/4 - 1/2 (0.258 mi.)	U82	153
3330 S. CICERO	3330 S. CICERO	WNW 1/4 - 1/2 (0.274 mi.)	Y94	165
3417 S 48TH CT	3417 S 48TH CT	WNW 1/4 - 1/2 (0.360 mi.)	98	168

Other Ascertainable Records

RCRA-NonGen: 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. 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). Non-Generators do not presently generate hazardous waste.

A review of the RCRA-NonGen list, as provided by EDR, and dated 06/15/2011 has revealed that there are 10 RCRA-NonGen sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DIAL CORP	***3514 S KOSTNER AVE***	***0 - 1/8 (0.000 mi.)***	***D16***	***30***
DISPOSAL SYSTEMS INC	***4600 W 34TH ST***	***WNW 0 - 1/8 (0.108 mi.)***	***41***	***67***
COMED MANHOLE	I-55 & PULASKI	SSE 1/8 - 1/4 (0.191 mi.)	M53	90
DOUBLE A METALS INC	***3321 S PULASKI RD***	***N 1/8 - 1/4 (0.194 mi.)***	***L54***	***92***
DAVID ARCHITECTURAL METALS INC	3100 S KILBORN	N 1/8 - 1/4 (0.237 mi.)	O57	104
ART METAL PRODUCTS CO	***3125 S KOLIN AVE***	***N 1/8 - 1/4 (0.250 mi.)***	***N73***	***142***

Lower Elevation	Address	Direction / Distance	Map ID	Page
JEVIC TRANSPORTATION INC	***4200 W 35TH PL/SITE B***	***0 - 1/8 (0.000 mi.)***	***F27***	***45***
EDGCOMB METALS	***3348 S PULASKI RD***	***N 1/8 - 1/4 (0.157 mi.)***	***L49***	***85***
CHEMICAL WASTE MGMT	***3799 S CICERO AVE***	***W 1/8 - 1/4 (0.245 mi.)***	***Q64***	***125***
TUXEDO JUNCTION	***3738 S CICERO AVE***	***W 1/8 - 1/4 (0.249 mi.)***	***P72***	***141***

IMPDMENT: 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.

A review of the IMPDMENT list, as provided by EDR, and dated 12/31/1980 has revealed that there is 1

IMPDMENT site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CITIES SERVICE OIL CO		W 0 - 1/8 (0.124 mi.)	44	71

EDR PROPRIETARY RECORDS

EDR Proprietary Records

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.

A review of the Manufactured Gas Plants list, as provided by EDR, has revealed that there are 3 Manufactured Gas Plants sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PEOPLES GAS AND LIGHT	4161 WEST 36TH STREET	0 - 1/8 (0.000 mi.)	C18	32
COMED-CRAWFORD STATION	3501 SOUTH PULASKI AVEN	E 0 - 1/8 (0.008 mi.)	H35	61

Lower Elevation	Address	Direction / Distance	Map ID	Page
MOBIL OIL LUBE PLANT	3801 SOUTH CICERO AVENU	W 1/8 - 1/4 (0.245 mi.)	Q63	125

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.

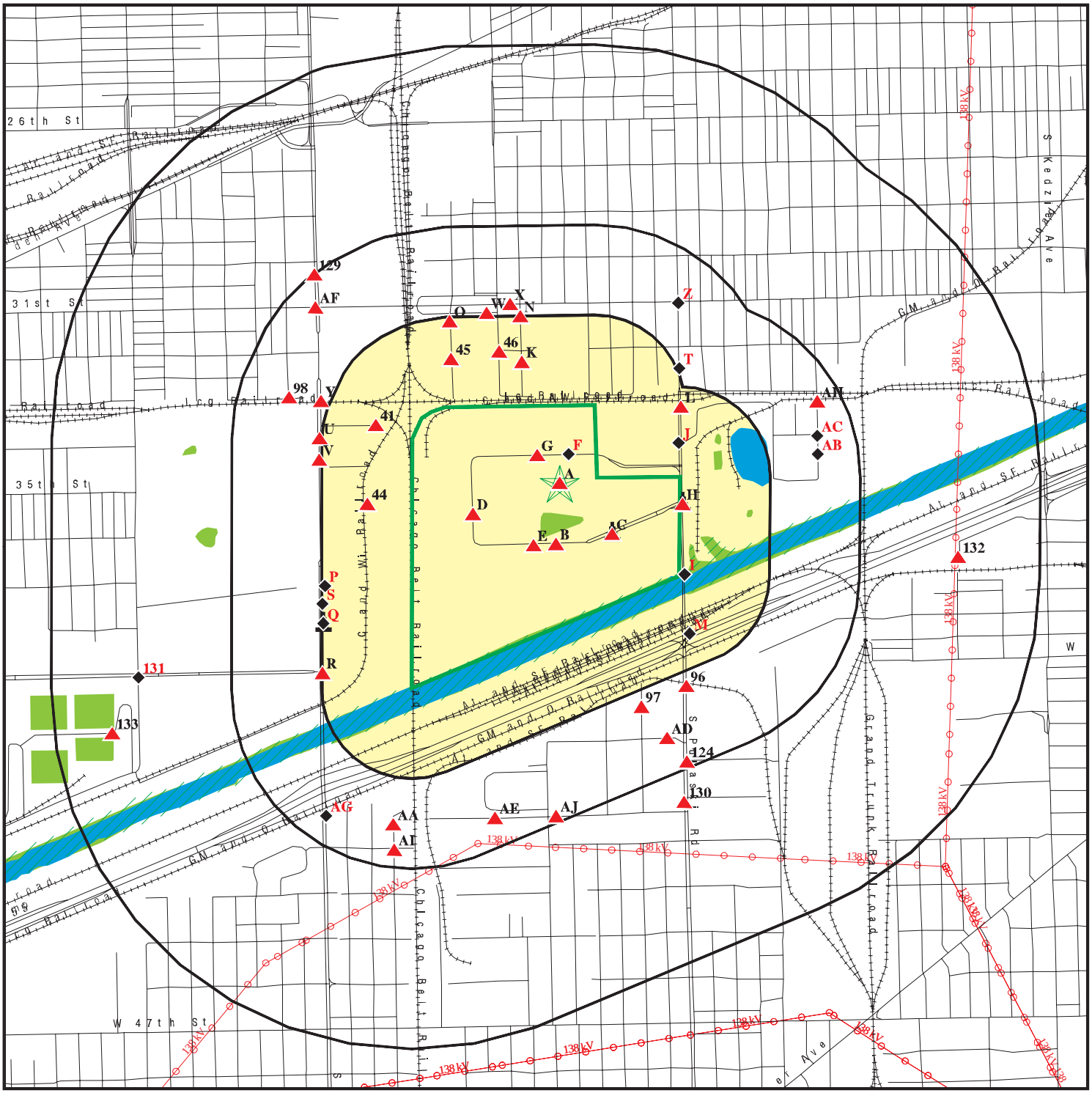
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FICHT COMMERCIAL CLEANING	4201 W 36TH ST	0 - 1/8 (0.000 mi.)	C11	23

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
ALL CITY ENVIRONMENTAL SERVICES	CERCLIS
FORMER PARCO PRODUCTS INC FACILITY	CORRACTS,FINDS,RCRA-NLR,RAATS,CERCLIS-NFRAP
COMED MANHOLE	RCRA-NLR
55TH STREET STATION	ERNS
ARGYLE STATION ON RED LINE	ERNS
BERWIN STATION	ERNS
BERWYN STATION RED LINE	ERNS
BLUE LINE CENTRAL STATION	ERNS
BLUE LINE CENTRAL STATION	ERNS
BROWN LINE AT KEDZIE STATION	ERNS
BY CHICAGO'S UNION STATION	ERNS
MONTROSS STATION	ERNS
NEAR ADDISON STATION	ERNS
POLK STATION	ERNS
WESTERN STATION	ERNS
CHICAGO UNION STATION	ERNS
CHICAGO UNION STATION	ERNS
LAKE MICHIGAN WILLAMETTE PUMPING S	ERNS
GAS STATION	FINDS
ROSELAND COMMUNITY	BROWNFIELDS

OVERVIEW MAP - 3178504.2s



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Oil & Gas pipelines from USGS

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: Former Crawford Station MGP	CLIENT: Natural Resource Technology
ADDRESS: 3500 South Pulaski Road Chicago IL 60632	CONTACT: Ronald J. Horan
LAT/LONG: 41.8296 / 87.7307	INQUIRY #: 3178504.2s
	DATE: October 04, 2011 1:09 pm

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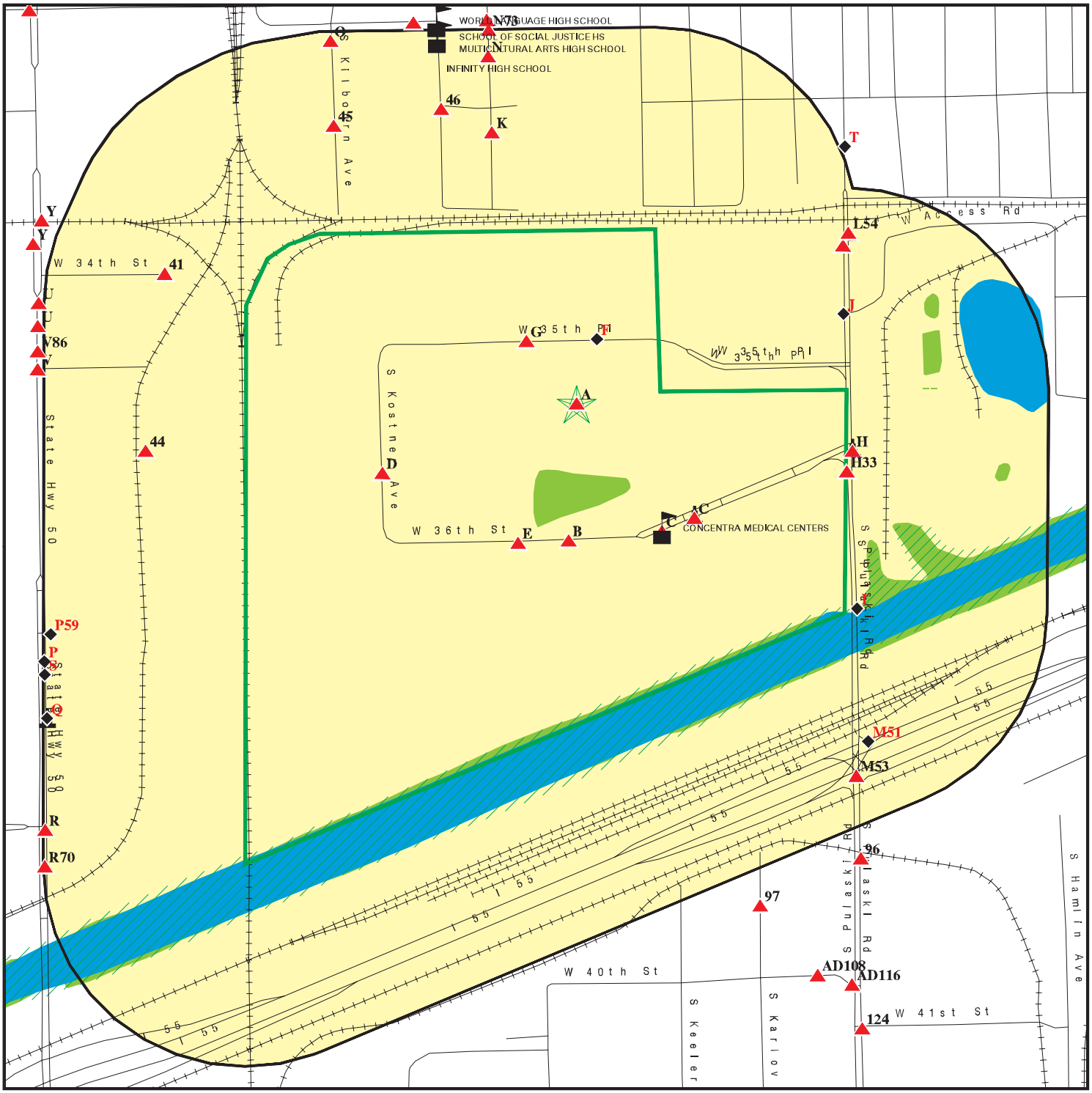
DETAIL MAP - 3178504.2s



0 1/8 1/4 1/2 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
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 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: Former Crawford Station MGP	CLIENT: Natural Resource Technology
ADDRESS: 3500 South Pulaski Road Chicago IL 60632	CONTACT: Ronald J. Horan
LAT/LONG: 41.8296 / 87.7307	INQUIRY #: 3178504.2s
	DATE: October 04, 2011 1:10 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
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL		1.000	0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	X	0.500	0	1	1	NR	NR	2
FEDERAL FACILITY		1.000	0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP		0.500	0	1	2	NR	NR	3
Federal RCRA CORRACTS facilities list								
CORRACTS		1.000	0	1	0	2	NR	3
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF		0.500	0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG		0.250	0	1	NR	NR	NR	1
RCRA-SQG		0.250	7	5	NR	NR	NR	12
RCRA-CESQG		0.250	5	1	NR	NR	NR	6
Federal institutional controls / engineering controls registries								
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SSU		1.000	0	0	1	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF		0.500	0	0	0	NR	NR	0
LF SPECIAL WASTE		0.500	0	0	0	NR	NR	0
IL NIPC		0.500	0	1	0	NR	NR	1
CCDD		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	X	0.500	8	7	38	NR	NR	53
LUST TRUST		0.500	1	0	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
INDIAN LUST		0.500	0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST		0.250	10	9	NR	NR	NR	19
INDIAN UST		0.250	0	0	NR	NR	NR	0
FEMA UST		0.250	0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS		0.500	0	1	3	NR	NR	4
INST CONTROL		0.500	1	1	3	NR	NR	5
State and tribal voluntary cleanup sites								
SRP		0.500	2	2	9	NR	NR	13
INDIAN VCP		0.500	0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	5	NR	NR	5
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
US HIST CDL		TP	NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS		TP	NR	NR	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen	X	0.250	3	7	NR	NR	NR	10
DOT OPS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0

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
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	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
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS	X	TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
NPDES		TP	NR	NR	NR	NR	NR	0
HWAR	X	TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
IMPDMENT		0.500	1	0	0	NR	NR	1
AIRS		TP	NR	NR	NR	NR	NR	0
TIER 2		TP	NR	NR	NR	NR	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
COAL ASH EPA		0.500	0	0	0	NR	NR	0
COAL ASH DOE		TP	NR	NR	NR	NR	NR	0
PIMW		0.250	0	0	NR	NR	NR	0
FINANCIAL ASSURANCE		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants		1.000	2	1	0	0	NR	3
EDR Historical Auto Stations		0.250	0	0	NR	NR	NR	0
EDR Historical Cleaners		0.250	1	0	NR	NR	NR	1

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 Target Property | **COM ED CRAWFORD STATION**
3500 S PULASKI RD
CHICAGO, IL 60623 | **HWAR** | **S110860700**
N/A

Site 1 of 6 in cluster A

Actual: 594 ft.

HWAR:

Location Telephone Number:	3122944441
Location Contact Name:	FRANK M NEMES
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41829520
Longitude In Decimal Degrees (Assumed Decimal):	087724090
Owner Or Alternate Company Name:	COM ED CRAWFORD STATION
Owner Or Alternate Street Address:	10 S DEARBORN
Owner Or Alternate Post Office Box:	767
Owner Or Alternate City:	CHICAGO
Owner Or Alternate State:	IL
Owner Or Alternate Zip Code:	60690
Owner Or Alternate Telephone Number:	3122944440
Owner Or Alternate Contact Name:	BRIAN M MCCANN
Operator Or Alternate Company Name:	COM ED CRAWFORD STATION
Operator Or Alternate Street Address:	10 S DEARBORN
Operator Or Alternate Post Office Box:	767
Operator Or Alternate City:	CHICAGO
Operator Or Alternate State:	IL
Operator Or Alternate Zip Code:	60690
Operator Or Alternate Telephone Number:	Not reported
Operator Or Alternate Contact Name:	Not reported
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	Not reported
Primary NAIC System Code:	Not reported
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	H
Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	Not reported
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above):	Not reported
Haz Waste Permit Ind (S Indicates Activity):	Not reported
Solid Waste Permit Ind (S Indicates Activity):	Not reported
Used Tire Program Activity Ind (S Indicates Activity):	Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity):	Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity):	Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity):	Not reported
Lust Program Activity Ind (S Indicates Activity):	S
Lust Reimbursement Program Activity Ind (S Indicates Activity):	Not reported
Site Remediation Program Activity Ind (S Indicates Activity):	Not reported
FSRS Activity Ind (S Indicates Activity):	Not reported
State Response Action Activity Ind (S Indicates Activity):	Not reported
Name And Address Change Date:	04/24/08
Hazardous Annual Report Company Name:	COMMONWEALTH EDISON
Hazardous Annual Report Street Address:	Not reported
Hazardous Annual Report Post Office Box:	767
Hazardous Annual Report City:	CHICAGO
Hazardous Annual Report State:	IL
Hazardous Annual Report Zip Code:	60690
Hazardous Annual Report Telephone Number:	3122944440
Hazardous Annual Report Contact First Name:	BRIAN M
Hazardous Annual Report Contact Last Name:	MCCANN
Hazardous Annual Report Contact Person Title Code:	D

COM ED CRAWFORD STATION (Continued) **S110860700**

Hazardous Annual Report New Notifier Code:	Not reported
FIPS Country Code:	001
FIPS State Code:	17
FIPS County Code:	031
FIPS City Or Township Code:	630
IEPA Region Identifier:	2
Original Entry Date:	08/12/92
Change Date:	02/07/11
Primary USEPA Identification Number:	ILD984902072
Status:	Not reported
Code:	BP
Total Tanks:	Not reported

A2 Target Property | **COMMONWEALTH EDISON**
3500 S PULASKI RD
CHICAGO, IL 60623 | **RCRA-NonGen FINDS LUST** | **1000823873 ILD984902072**

Site 2 of 6 in cluster A

Actual: 594 ft.

RCRA-NonGen:

Date form received by agency:	04/01/2006
Facility name:	COMMONWEALTH EDISON
Facility address:	3500 S PULASKI RD CHICAGO, IL 60623
EPA ID:	ILD984902072
Contact:	ENV COORDINATOR
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(312) 294-4441
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	COMMONWEALTH EDISON
Owner/operator address:	PO BOX 767 CHICAGO, IL 60690
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 294-4440
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	COMMONWEALTH EDISON
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1900
Owner/Op end date:	Not reported

Owner/operator name:	COMMONWEALTH EDISON

COMMONWEALTH EDISON (Continued) **1000823873**

Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1900
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/12/1992
Facility name: COMMONWEALTH EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D000
Waste name: Not Defined

Violation Status: No violations found

FINDS:

Registry ID: 110005915126

Environmental Interest/Information System
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: 922960
IL EPA Id: 0316305070
Product: Fuel Oil
IEMA Date: 10/20/1992
Project Manager: Harlow

COMMONWEALTH EDISON (Continued) **1000823873**

Project Manager Phone:	(217) 524-7650
Email:	Robert.Harlow@illinois.gov
PRP Name:	Commonwealth Edison
PRP Contact:	Paul Murphy
PRP Address:	10 South Dearborn St., 35th Floor
PRP City,St,Zip:	Chicago, IL 60603
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	11/06/1992
45 Report Received:	02/17/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**03/16/1994**
NFR Date Recorded:	Not reported

Incident Num:	922980
IL EPA Id:	0316305070
Product:	Fuel Oil
IEMA Date:	10/22/1992
Project Manager:	Harlow
Project Manager Phone:	(217) 524-7650
Email:	Robert.Harlow@illinois.gov
PRP Name:	Commonwealth Edison
PRP Contact:	Env. Service Dept.
PRP Address:	10 South Dearborn St., 35th Floor, P.O. Box 767
PRP City,St,Zip:	Chicago, IL 60698
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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:	**03/16/1994**
NFR Date Recorded:	Not reported

A3 Target Property **PEOPLES GAS CRAWFORD STATION FORMER MGP** **ICIS** **1011582540**
3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 606 **N/A**
CHICAGO, IL 60623

Site 3 of 6 in cluster A

Actual: 594 ft.

ICIS:

Enforcement Action ID:	05-2009-1001
FRS ID:	110030434331
Program ID:	CERCLIS ILN000510192
Action Name:	PEOPLES GAS ADMIN ORDER ON CONSENT RI/FS 11 SITES (CERCLA)
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Facility Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 60623 CHICAGO, Illinois 60623
Enforcement Action Type:	CERCLA 122A/104A Agrmt For RI/FS
Facility County:	Cook
EPA Region #:	6

Enforcement Action ID:	05-2009-1001
FRS ID:	110030434331
Program ID:	FRS 110030434331

PEOPLES GAS CRAWFORD STATION FORMER MGP (Continued) **1011582540**

Action Name:	PEOPLES GAS ADMIN ORDER ON CONSENT RI/FS 11 SITES (CERCLA)
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Facility Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 60623 CHICAGO, Illinois 60623
Enforcement Action Type:	CERCLA 122A/104A Agrmt For RI/FS
Facility County:	Cook
EPA Region #:	6
Enforcement Action ID:	05-2007-0824
FRS ID:	110030434331
Program ID:	FRS 110030434331
Action Name:	PEOPLES GAS ADMIN ORDER ON CONSENT (CERCLA) FOR EE/CA AT 11 SITES
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Facility Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 60623 CHICAGO, Illinois 60623
Enforcement Action Type:	CERCLA 106 AO For Resp Action/Imm Haz
Facility County:	Cook
EPA Region #:	6
Enforcement Action ID:	05-2007-0824
FRS ID:	110030434331
Program ID:	CERCLIS ILN000510192
Action Name:	PEOPLES GAS ADMIN ORDER ON CONSENT (CERCLA) FOR EE/CA AT 11 SITES
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Facility Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV CHICAGO IL 60623 CHICAGO, Illinois 60623
Enforcement Action Type:	CERCLA 106 AO For Resp Action/Imm Haz
Facility County:	Cook
EPA Region #:	6
Program ID:	CERCLIS ILN000510192
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Program ID:	FRS 110030434331
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Program ID:	CERCLIS ILN000510192
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP
Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Program ID:	FRS 110030434331
Facility Name:	PEOPLES GAS CRAWFORD STATION FORMER MGP

PEOPLES GAS CRAWFORD STATION FORMER MGP (Continued) **1011582540**

Address:	3500 S. PULASKI RD (FORMERLY CRAWFORD AV
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported

A4 Target Property **COM ED CRAWFORD STATION** **FINDS** **1008150167**
3500 S PULASKI RD **N/A**
CHICAGO, IL 60623

Site 4 of 6 in cluster A

Actual: 594 ft.

FINDS:

Registry ID: 110018469879

Environmental Interest/Information System
ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

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A5 Target Property **PEOPLES GAS CRAWFORD STATION FORMER MGP** **CERCLIS** **1010417086**
3500 S. PULASKI RD (FORMERLY CRAWFORD AV **ILN000510192**
CHICAGO, IL 60623

Site 5 of 6 in cluster A

Actual: 594 ft.

CERCLIS:

Site ID:	0510192
EPA ID:	ILN000510192
Facility County:	COOK
Short Name:	PEOPLES GAS CRAWFORD STAT
Congressional District:	04
IFMS ID:	B5HK
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility
DMNSN Number:	Not reported
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	S
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	05
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Remedial Activities Under EPA Enforcement
Non NPL Status Date:	20081031
Site Fips Code:	17031
CC Concurrence Date:	Not reported

PEOPLES GAS CRAWFORD STATION FORMER MGP (Continued) **1010417086**

CC Concurrence FY: Not reported
Alias EPA ID: Not reported
Site FUDS Flag: Not reported

CERCLIS Site Contact Name(s):

Contact ID: 5271197.00000
Contact Name: THOMAS COOK
Contact Tel: (312) 886-7182
Contact Title: On-Scene Coordinator (OSC)
Contact Email: Not reported

Contact ID: 5271033.00000
Contact Name: MIKE JOYCE
Contact Tel: (312) 353-5546
Contact Title: Community Involvement Coordinator
Contact Email: Not reported

Contact ID: 5270006.00000
Contact Name: ROSS DEL ROSARIO
Contact Tel: (312) 886-6195
Contact Title: Remedial Project Manager (RPM)
Contact Email: delrosario.rosauro@epa.gov

Contact ID: 13002783.00000
Contact Name: TaNaisha Lee
Contact Tel: (312) 886-7570
Contact Title: Remedial Project Manager (RPM)
Contact Email: lee.tanaisha@epa.gov

Alias Comments: Not reported
Site Description: In 1921, the Koppers Company and PeoplesGas entered into an agreement whereby Koppers built, financed, and operated a by-product coke plant. Peoples Gas bought the gas and coke manufactured at the plant for distribution. Peoples Gas aquired the facility in 1928. It included 105 coke ovens (increased to 151 ovens), 9 water gas sets, and 2 million cubic foot gas holders. Production stopped in 1963 and site retired in 1965. Shallow GW has been impacted. Site borders the Chicago river.

CERCLIS Assessment History:

Action Code: 001
Action: DISCOVERY
Date Started: Not reported
Date Completed: 04/12/2007
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001
Action: ADMINISTRATIVE ORDER ON CONSENT
Date Started: Not reported
Date Completed: 06/05/2007

PEOPLES GAS CRAWFORD STATION FORMER MGP (Continued) **1010417086**

Priority Level:	Multi-Site-Subsequent Site
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	PRELIMINARY ASSESSMENT
Date Started:	04/12/2007
Date Completed:	03/14/2008
Priority Level:	Higher priority for further assessment
Operable Unit:	SITEWIDE
Primary Responsibility:	State, Fund Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	ENGINEERING EVALUATION/COST ANALYSIS
Date Started:	06/05/2007
Date Completed:	10/31/2008
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Responsible Party
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Other Start and Completion Anomaly

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	ADMINISTRATIVE ORDER ON CONSENT
Date Started:	Not reported
Date Completed:	10/31/2008
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	POTENTIALLY RESPONSIBLE PARTY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started:	10/31/2008
Date Completed:	Not reported
Priority Level:	Not reported
Operable Unit:	SITEWIDE

PEOPLES GAS CRAWFORD STATION FORMER MGP (Continued) **1010417086**

Primary Responsibility: Responsible Party
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

A6
Target Property

PEOPLES GAS CRAWFORD STATION FORMER MGP
3500 S. PULASKI RD (FORMERLY CRAWFORD AV
CHICAGO, IL 60623

FINDS **1010162022**
N/A

Site 6 of 6 in cluster A

Actual:
594 ft.

FINDS:

Registry ID: 110030434331

Environmental Interest/Information System
CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

B7

< 1/8
1 ft.

FORMER COCA-COLA PTO
4301 WEST 36TH STREET
CHICAGO, IL 60632

INST CONTROL **S104491704**
SRP **N/A**

Site 1 of 2 in cluster B

Relative:
Higher

Actual:
595 ft.

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0316580016
NFR Letter:	09/24/1999
Date NFR Recorded:	09/27/1999
Type Of Site:	Residential
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Gregory Koch
RA Company:	The Coca-Cola Company
RA Address:	One Coca-Cola Plaza
RA Secondary Address:	Not reported
RA City,St,Zip:	Atlanta, GA 30313-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Not reported
Worker Caution:	False
Acres:	6.7

SRP:

IL EPA Id:	0316580016
US EPA Id:	Not reported
Longitude:	-87.73288
Latitude:	41.82601
Contact Name:	Gregory Koch

FORMER COCA-COLA PTO (Continued) **S104491704**

Contact Address:	One Coca Cola Plaza
Contact Address2:	Not reported
Contact City,St,Zip:	Atlanta, GA 30313-
Contact Phone:	(409) 676-7698
Date Enrolled:	04/20/1999
Point Of Contact:	Steven J. Wanner
Consultant Company:	Conestoga-Rovers & Associates, Inc.
Consultant Address:	8615 West Bryn Mawr Avenue
Consultant Address2:	Not reported
Consultant City,St,Zip:	Chicago, IL 60631-
Consultant Phone:	(773) 380-9933
Proj Mgr Assigned:	L-Gaydosh
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	6.7
No Further Remediation Letter Dt:	8/11/1999
Remediation Applicant Co:	The Coca Cola Company
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Mr. Gregory Koch
Remediation Applicant Company:	The Coca-Cola Company
Remediation Applicant Address:	One Coca-Cola Plaza
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Atlanta, GA 30313-
Illinois EPA:	0316580016
Site Name:	Former Coca-Cola PTO
NFR Letter:	9/24/1999
NFR Letter Date Recorded:	9/27/1999
Site Type:	Residential
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Not reported
Worker Caution:	False
Acres:	6.7

IL EPA Id:	0316580016
US EPA Id:	Not reported
Longitude:	-87.73288
Latitude:	41.82601
Contact Name:	Gregory Koch
Contact Address:	One Coca Cola Plaza
Contact Address2:	Not reported
Contact City,St,Zip:	Atlanta, GA 30313-
Contact Phone:	(409) 676-7698
Date Enrolled:	04/20/1999
Point Of Contact:	Steven J. Wanner
Consultant Company:	Conestoga-Rovers & Associates, Inc.
Consultant Address:	8615 West Bryn Mawr Avenue
Consultant Address2:	Not reported
Consultant City,St,Zip:	Chicago, IL 60631-
Consultant Phone:	(773) 380-9933
Proj Mgr Assigned:	L-Gaydosh
Sec. 4 Letter Date:	Not reported
NFR Recorded:	9/27/1999
Active:	False
Total Acres:	6.7

FORMER COCA-COLA PTO (Continued) **S104491704**

No Further Remediation Letter Dt:	9/24/1999
Remediation Applicant Co:	The Coca Cola Company
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Mr. Gregory Koch
Remediation Applicant Company:	The Coca-Cola Company
Remediation Applicant Address:	One Coca-Cola Plaza
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Atlanta, GA 30313-
Illinois EPA:	0316580016
Site Name:	Former Coca-Cola PTO
NFR Letter:	9/24/1999
NFR Letter Date Recorded:	9/27/1999
Site Type:	Residential
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Not reported
Worker Caution:	False
Acres:	6.7

B8 **COCA-COLA USA DIV OF COCA-COLA** **UST** **U000865057**
4301 W 36TH ST **HWAR** **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 2 in cluster B

Relative: Higher

Actual: 595 ft.

UST:

Facility ID:	2018091
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Coca Cola Usa Div Of Coca Cola
Owner Id:	U0003157
Owner Address:	4301 W 36Th St
Owner City,St,Zip:	Chicago, IL 60632
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No
Tank Number:	2
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported

COCA-COLA USA DIV OF COCA-COLA (Continued) **U000865057**

Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	3
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	4
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	5
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

COCA-COLA USA DIV OF COCA-COLA (Continued) **U000865057**

Tank Number:	6
Tank Capacity:	1000
Tank Substance:	Lube Oil
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	7
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	10/1/1987
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

HWAR:

Location Telephone Number:	Not reported
Location Contact Name:	JOHN PALKA
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41826010
Longitude In Decimal Degrees (Assumed Decimal):	087732880
Owner Or Alternate Company Name:	COCA COLA USA
Owner Or Alternate Street Address:	Not reported
Owner Or Alternate Post Office Box:	1734
Owner Or Alternate City:	ATLANTA
Owner Or Alternate State:	GA
Owner Or Alternate Zip Code:	30303
Owner Or Alternate Telephone Number:	Not reported
Owner Or Alternate Contact Name:	Not reported
Operator Or Alternate Company Name:	COCA COLA USA
Operator Or Alternate Street Address:	Not reported
Operator Or Alternate Post Office Box:	1734
Operator Or Alternate City:	ATLANTA
Operator Or Alternate State:	GA
Operator Or Alternate Zip Code:	30303
Operator Or Alternate Telephone Number:	Not reported
Operator Or Alternate Contact Name:	Not reported
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	Not reported
Primary NAIC System Code:	Not reported
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	Not reported

COCA-COLA USA DIV OF COCA-COLA (Continued) **U000865057**

Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	H
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above):	Not reported
Haz Waste Permit Ind (S Indicates Activity):	Not reported
Solid Waste Permit Ind (S Indicates Activity):	Not reported
Used Tire Program Activity Ind (S Indicates Activity):	Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity):	Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity):	Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity):	Not reported
Lust Program Activity Ind (S Indicates Activity):	Not reported
Lust Reimbursement Program Activity Ind (S Indicates Activity):	Not reported
Site Remediation Program Activity Ind (S Indicates Activity):	S
FSRS Activity Ind (S Indicates Activity):	Not reported
State Response Action Activity Ind (S Indicates Activity):	Not reported
Name And Address Change Date:	08/14/07
Hazardous Annual Report Company Name:	Not reported
Hazardous Annual Report Street Address:	Not reported
Hazardous Annual Report Post Office Box:	Not reported
Hazardous Annual Report City:	Not reported
Hazardous Annual Report State:	Not reported
Hazardous Annual Report Zip Code:	Not reported
Hazardous Annual Report Telephone Number:	Not reported
Hazardous Annual Report Contact First Name:	Not reported
Hazardous Annual Report Contact Last Name:	Not reported
Hazardous Annual Report Contact Person Title Code:	Not reported
Hazardous Annual Report New Notifier Code:	Not reported
FIPS Country Code:	001
FIPS State Code:	17
FIPS County Code:	031
FIPS City Or Township Code:	658
IEPA Region Identifier:	2
Original Entry Date:	10/25/90
Change Date:	02/07/11
Primary USEPA Identification Number:	Not reported
Status:	Not reported
Code:	BP
Total Tanks:	Not reported

C9 **INSTITUTE OF GAS TECHNOLOGY** **UST** **U001142632**
4201 W 36TH ST **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 1 of 8 in cluster C

Relative:
Higher

Actual:
595 ft.

UST:

Facility ID:	2006216
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Institute Of Gas Technology
Owner Id:	U0007554
Owner Address:	3424 S State St
Owner City,St,Zip:	Chicago, IL 60616
Tank Number:	1
Tank Capacity:	6000
Tank Substance:	Gasoline

INSTITUTE OF GAS TECHNOLOGY (Continued) **U001142632**

Last Used Date:	Not reported
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	2
Tank Capacity:	5300
Tank Substance:	Fuel Oil
Last Used Date:	Not reported
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

C10 **INSTITUTE OF GAS TECHNOLOGY** **RCRA-SQG** **1000413989**
4201 WEST 36TH STREET **FINDS** **ILD981192107**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 8 in cluster C

Relative:
Higher

Actual:
595 ft.

RCRA-SQG:

Date form received by agency:	07/26/2002
Facility name:	SUPERIOR GRAPHITE
Facility address:	4201 W 36TH ST CHICAGO, IL 60632
EPA ID:	ILD981192107
Contact:	BRUCE WELLS
Contact address:	4201 W 36TH ST CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(773) 890-4100
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SUPERIOR GRAPHITE
Owner/operator address:	4201 W 36TH ST

INSTITUTE OF GAS TECHNOLOGY (Continued) **1000413989**

CHICAGO, IL 60632
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/0001
Owner/Op end date: Not reported

Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/01/1994
Facility name: SUPERIOR GRAPHITE
Site name: INSTITUTE OF GAS TECHNOLOGY
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 02/07/1986
Facility name: SUPERIOR GRAPHITE
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: F003
Waste name: 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

INSTITUTE OF GAS TECHNOLOGY (Continued) **1000413989**

MIXTURES.

Waste code: F024
Waste name: PROCESS WASTES, INCLUDING BUT NOT LIMITED TO, DISTILLATION RESIDUES, HEAVY ENDS, TARS, AND REACTOR CLEAN-OUT WASTES, FROM THE PRODUCTION OF CERTAIN CHLORINATED ALIPHATIC HYDROCARBONS BY FREE RADICAL CATALYZED PROCESSES. THESE CHLORINATED ALIPHATIC HYDROCARBONS ARE THOSE HAVING CARBON CHAIN LENGTHS RANGING FROM ONE TO AND INCLUDING FIVE, WITH VARYING AMOUNTS AND POSITIONS OF CHLORINE SUBSTITUTION. (THIS LISTING DOES NOT INCLUDE WASTEWATERS, WASTEWATER TREATMENT SLUDGES, SPENT CATALYSTS, AND WASTES LISTED IN SECTION 261.31 OR SECTION 261.32).

Violation Status: No violations found

FINDS:

Registry ID: 110001289588

Environmental Interest/Information System

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.

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.

C11 **FICHT COMMERCIAL CLEANING** **EDR Historical Cleaners** **1009186065**
4201 W 36TH ST **N/A**
< 1/8 **CHICAGO, IL**
1 ft.

Site 3 of 8 in cluster C

Relative: Higher

EDR Historical Cleaners:
Name: FICHT COMMERCIAL CLEANING
Year: 2003
Type: CLEANERS

Actual: 595 ft.

C12 **URBAN INVESTMENT RESEARCH CORP** **RCRA-SQG** **1010563447**
4201 W 36TH ST STE 320 **ILR000148585**
< 1/8 **CHICAGO, IL 60712**
1 ft.

Site 4 of 8 in cluster C

Relative:
Higher

Actual:
595 ft.

RCRA-SQG:

Date form received by agency:	08/21/2007
Facility name:	URBAN INVESTMENT RESEARCH CORP
Facility address:	4201 W 36TH ST STE 320 CHICAGO, IL 60712
EPA ID:	ILR000148585
Contact:	KIM BEJLOVEC
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(773) 650-1570
Contact email:	KIM@UIRC.COM
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	BISMARCK BRACKETT
Owner/operator address:	4201 W 36TH ST STE 320 CHICAGO, IL 60712
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1997
Owner/Op end date:	Not reported

Owner/operator name:	BISMARCK BRACKETT
Owner/operator address:	4201 W 36TH ST STE 320 CHICAGO, IL 60712
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1997
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

URBAN INVESTMENT RESEARCH CORP (Continued) **1010563447**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

Violation Status: No violations found

D13 **CHICAGO COLD STORAGE COMPANY** **RCRA-SQG** **1000823847**
3534 S KOSTNER **FINDS** **ILD984901819**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 1 of 6 in cluster D

Relative:
Higher

Actual:
596 ft.

RCRA-SQG:
Date form received by agency: 08/10/1992
Facility name: SARA LEE CORP
Facility address: 3534 S KOSTNER
CHICAGO, IL 60632
EPA ID: ILD984901819
Mailing address: 510 LAKE COOK RD
DEERFIELD, IL 60015
Contact: GERRY DOHERTY
Contact address: 510 LAKE COOK RD
DEERFIELD, IL 60015
Contact country: US
Contact telephone: (708) 405-0671
Contact email: Not reported
EPA Region: 05
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: BAKERY SARA LEE
Owner/operator address: 224 S MICHIGAN AVE

CHICAGO COLD STORAGE COMPANY (Continued) **1000823847**

CHICAGO, IL 60604
Owner/operator country: Not reported
Owner/operator telephone: (312) 986-7800
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D001
Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110005914957

Environmental Interest/Information System
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

CHICAGO COLD STORAGE COMPANY (Continued) **1000823847**

it 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.

D14 **BRIDGE TERMINAL TRANSPORT INC** **RCRA-SQG** **1000463084**
3600 S KOSTNER **FINDS** **ILD984813535**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 6 in cluster D

Relative:
Higher

Actual:
596 ft.

RCRA-SQG:

Date form received by agency:	10/24/2007
Facility name:	BRIDGE TERMINAL TRANSPORT
Facility address:	3600 S KOSTNER CHICAGO, IL 60632
EPA ID:	ILD984813535
Contact:	VINCENT BUONASSI
Contact address:	3600 S KOSTNER CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(773) 523-6870
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	XTRA CORP
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No

BRIDGE TERMINAL TRANSPORT INC (Continued) **1000463084**

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/01/1991
Facility name: BRIDGE TERMINAL TRANSPORT
Site name: XTRA CORP
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110005884622

Environmental Interest/Information System
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.

D15 **TKX COLD STORAGE** **UST** **U000865424**
3534 KOSTNER AVE FOMER SARA LEE FAC **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 3 of 6 in cluster D

Relative:
Higher

Actual:
596 ft.

UST:
Facility ID: 2010301
Facility Status: CLOSED
Facility Type: **OTHER**
Owner Name: Sara Lee Bakery
Owner Id: U0018000
Owner Address: 224 S Michigan Ave 11Th Fl
Owner City,St,Zip: Chicago, IL 60604

Tank Number: 1
Tank Capacity: 2000
Tank Substance: Not reported

TKX COLD STORAGE (Continued) **U000865424**

Last Used Date:	9/11/1992
OSFM First Notify Date:	2/11/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1973
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	2000
Tank Substance:	Used Oil
Last Used Date:	9/11/1992
OSFM First Notify Date:	2/11/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1973
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	3
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	9/11/1992
OSFM First Notify Date:	2/11/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1973
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	4
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	9/11/1992
OSFM First Notify Date:	2/11/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1973
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**

TKX COLD STORAGE (Continued) **U000865424**

Self Service Permit Expire Date: **Not reported**
Fee Due: Not reported

D16 **DIAL CORP** **RCRA-NonGen** **1001116786**
3514 S KOSTNER AVE **FINDS** **ILR000028118**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 4 of 6 in cluster D

Relative:
Higher

Actual:
596 ft.

RCRA-NonGen:

Date form received by agency:	04/01/2006
Facility name:	DIAL CORP
Facility address:	3514 S KOSTNER AVE CHICAGO, IL 60632
EPA ID:	ILR000028118
Contact:	ENV COORDINATOR
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(773) 523-0044
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	MOORE LES
Owner/operator address:	15101 N SCOTTSDALE SCOTTSDALE, IL 85254
Owner/operator country:	Not reported
Owner/operator telephone:	(602) 905-2728
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	DIAL CORP
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1900
Owner/Op end date:	Not reported

Owner/operator name:	DIAL CORP
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1900
Owner/Op end date:	Not reported

DIAL CORP (Continued) **1001116786**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/26/1996
Facility name:	DIAL CORP
Classification:	Large Quantity Generator

Hazardous Waste Summary:

Waste code:	D001
Waste name:	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.
Violation Status:	No violations found

FINDS:

Registry ID: 110005948626

Environmental Interest/Information System

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.

D17 **SARA LEE BAKERY** **LUST** **S104524545**
3535 SOUTH KOSTNER AVE. **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 5 of 6 in cluster D

Relative: Higher

Actual: 596 ft.

LUST:

Incident Num:	922615
IL EPA Id:	0316575039
Product:	Gasoline, Deisel
IEMA Date:	09/17/1992
Project Manager:	Lockart
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Sara Lee Bakery
PRP Contact:	George Johnson
PRP Address:	224 South Michigan Ave. Floor 11
PRP City,St,Zip:	Chicago, IL 60604-2597
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	09/30/1992
45 Report Received:	01/21/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**06/28/1996**
NFR Date Recorded:	Not reported

C18 **PEOPLES GAS AND LIGHT** **Manufactured Gas Plants** **1008407341**
4161 WEST 36TH STREET **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 5 of 8 in cluster C

Relative: Higher

Actual: 595 ft.

Manufactured Gas Plants:

No additional information available

C19 **ROAD LINK** **RCRA-CESQG** **1012178505**
4201 W 36TH ST **ILR000155804**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 6 of 8 in cluster C

Relative: Higher

Actual: 595 ft.

RCRA-CESQG:

Date form received by agency:	12/05/2008
Facility name:	ROAD LINK
Facility address:	4201 W 36TH ST CHICAGO, IL 60632
EPA ID:	ILR000155804
Mailing address:	1240 WIN DR BETHLEHEM, PA 18017
Contact:	JOHN DEHOLL
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(610) 691-6924

ROAD LINK (Continued) **1012178505**

Telephone ext.: 261
Contact email: Not reported
EPA Region: 05
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: ROAD LINK
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 12/05/2008
Owner/Op end date: Not reported

Owner/operator name: ROAD LINK
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/05/2008
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

ROAD LINK (Continued) **1012178505**

Violation Status: No violations found

C20 **PEOPLES GAS: CRAWFORD STATION** **RCRA-CESQG** **1001487435**
4161 W 36TH ST **PADS** **ILD984778456**
< 1/8 **CHICAGO, IL 60623** **FINDS**
1 ft. **MANIFEST**

Site 7 of 8 in cluster C

Relative: Higher

Actual: 595 ft.

RCRA-CESQG:

Date form received by agency:	03/01/2007
Facility name:	PEOPLES GAS: CRAWFORD STATION
Facility address:	4161 W 36TH ST CHICAGO, IL 60632
EPA ID:	ILD984778456
Mailing address:	130 E RANDOLPH DR CHICAGO, IL 60601
Contact:	STEVEN MATUSZAK
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(312) 240-4560
Contact email:	Not reported
EPA Region:	05
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency: 03/01/2006

PEOPLES GAS: CRAWFORD STATION (Continued) **1001487435**

Facility name: PEOPLES GAS: CRAWFORD STATION
Classification: Small Quantity Generator

Date form received by agency: 03/01/2002
Facility name: PEOPLES GAS: CRAWFORD STATION
Classification: Large Quantity Generator

Date form received by agency: 03/01/2000
Facility name: PEOPLES GAS: CRAWFORD STATION
Site name: PEOPLES GAS LIGHT & COKE CO
Classification: Large Quantity Generator

Date form received by agency: 05/27/1999
Facility name: PEOPLES GAS: CRAWFORD STATION
Site name: CRAWFORD STATION
Classification: Large Quantity Generator

Violation Status: No violations found

PADS:

EPAID: ILD984778456
Facility name: CRAWFORD STATION
Facility Address: 4161 W 36TH ST
CHICAGO, IL 60623
Facility country: US
Generator: Yes
Storer: No
Transporter: No
Disposer: No
Research facility: No
Smelter: No
Facility owner name: PEOPLES GAS LGT AND COKE CO
Contact title: Not reported
Contact name: STEVEN J. MATUSZAK
Contact tel: (312)240-4560
Contact extension: Not reported
Mailing address: 130E. RANDOLPH DRIVE
CHICAGO, IL 60601
Mailing country: US
Cert. title: Not reported
Cert. name: Not reported
Cert. date: 3/7/1990
Date received: 4/4/1990

FINDS:

Registry ID: 110001817829

Environmental Interest/Information System
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

PEOPLES GAS: CRAWFORD STATION (Continued) **1001487435**

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.

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 it 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.

NY MANIFEST:

EPA ID:	ILD984778456
Country:	USA
Mailing Name:	PEOPLES ENERGY
Mailing Contact:	WILLIE MILLS
Mailing Address:	130 E RANDOLPH
Mailing Address 2:	Not reported
Mailing City:	CHICAGO
Mailing State:	IL
Mailing Zip:	60601
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	312-240-4032

Document ID:	NYG0592569
Manifest Status:	Not reported

PEOPLES GAS: CRAWFORD STATION (Continued) **1001487435**

Trans1 State ID:	ILD981957236
Trans2 State ID:	ILD981857236
Generator Ship Date:	02/26/2001
Trans1 Recv Date:	02/26/2001
Trans2 Recv Date:	03/05/2001
TSD Site Recv Date:	03/20/2001
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	ILD984778456
Trans1 EPA ID:	NYD049836679
Trans2 EPA ID:	Not reported
TSDF ID:	IL017
Waste Code:	B003 - PETROLEUM OIL WITH 500 PPM OR > PCB
Quantity:	00499
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	002
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	01.00
Year:	2001

D21 **XTRA UBC** **UST** **U003152260**
3600 S KOSTNER **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 6 of 6 in cluster D

Relative:
Higher

Actual:
596 ft.

UST:

Facility ID:	2022333
Facility Status:	EXEMPT
Facility Type:	**NONE**
Owner Name:	Xtra Ubc
Owner Id:	U0019228
Owner Address:	3600 S Kostner
Owner City,St,Zip:	Chicago, IL 60632
Tank Number:	1
Tank Capacity:	1000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	5/7/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported
Tank Number:	2
Tank Capacity:	4000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	5/7/1986
Tank Status:	**Exempt from registration**

XTRA UBC (Continued) **U003152260**

Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

C22 **PEOPLES GAS LIGHT & COKE CO. - CRAWFORD STATION** **SRP** **S104491705**
4161 WEST 36TH STREET **TIER 2** **N/A**
< 1/8 **CHICAGO, IL 60623**
1 ft.

Site 8 of 8 in cluster C

Relative:
Higher

Actual:
595 ft.

SRP:

IL EPA Id:	0316585010
US EPA Id:	ILD984778456
Longitude:	-87.72822
Latitude:	41.82715
Contact Name:	Steven Matuszak
Contact Address:	130 East Randolph Drive
Contact Address2:	20th Floor
Contact City,St,Zip:	Chicago, IL 60601-
Contact Phone:	(312) 240-4810
Date Enrolled:	12/05/2000
Point Of Contact:	Larry F. Milner, P.E.
Consultant Company:	Burns & McDonnell
Consultant Address:	2601 West 22nd Street
Consultant Address2:	Not reported
Consultant City,St,Zip:	Oak Brook, IL 60523-1229
Consultant Phone:	(630) 990-0300
Proj Mgr Assigned:	Seul
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	35
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	The Peoples Gas Light and Coke Company
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

PEOPLES GAS LIGHT & COKE CO. - CRAWFORD STATION (Continued) **S104491705**

TIER 2:

Corporate Name:	Peoples Gas Light & Coke Co.
Latitude:	41.82743
Longitude:	-87.728359999999896
Chemical Name:	ETHYLENE GLYCOL/WATER
CAS Number:	107211
Max Daily Range:	100,000 - 999,999
Year:	2008

Corporate Name:	Peoples Gas Light & Coke Co.
Latitude:	41.82743
Longitude:	-87.728359999999896
Chemical Name:	ETHYLENE GLYCOL/WATER
CAS Number:	107211
Max Daily Range:	100,000 - 999,999
Year:	2009

Corporate Name:	Peoples Gas Light & Coke Co.
Latitude:	41.82743
Longitude:	-87.728359999999896
Chemical Name:	ETHYLENE GLYCOL/WATER
CAS Number:	107211
Max Daily Range:	100,000-999,999
Year:	2010

E23 **NATIONS WAY TRANSPORT** **RCRA-SQG** **1001201917**
4359 W 36TH ST **FINDS** **ILR000041632**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 1 of 4 in cluster E

Relative: Higher

Actual: 596 ft.

RCRA-SQG:

Date form received by agency:	08/13/1997
Facility name:	NATIONS WAY TRANSPORT
Facility address:	4359 W 36TH ST CHICAGO, IL 60632
EPA ID:	ILR000041632
Contact:	JOHN MEZYK
Contact address:	4359 W 36TH ST CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(773) 890-5959
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	TERMINAL MANAGEMENT INC
Owner/operator address:	10875 INDECO DR CINCINNATI, OH 45241
Owner/operator country:	Not reported
Owner/operator telephone:	(513) 891-2245

NATIONS WAY TRANSPORT (Continued) **1001201917**

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

Waste code: U002
Waste name: ACETONE (I)

Violation Status: No violations found

FINDS:

Registry ID: 110009385110

Environmental Interest/Information System
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,

NATIONS WAY TRANSPORT (Continued) **1001201917**

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.

F24 **VITRAN EXPRESS** **RCRA-CESQG** **1000188823**
4200 W 35TH PL **FINDS** **ILD984775023**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 1 of 4 in cluster F

Relative:
Lower

Actual:
593 ft.

RCRA-CESQG:

Date form received by agency:	01/17/2003
Facility name:	VITRAN EXPRESS
Facility address:	4200 W 35TH PL CHICAGO, IL 60632
EPA ID:	ILD984775023
Contact:	MARK MILLER
Contact address:	4200 W 35TH PL CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(773) 648-2595
Contact email:	Not reported
EPA Region:	05
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	WONDERVIEW CORP
Owner/operator address:	PO BOX 1840 BOULDER, CO 80306
Owner/operator country:	Not reported
Owner/operator telephone:	(303) 413-1874
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	09/11/2000
Owner/Op end date:	Not reported
Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private

VITRAN EXPRESS (Continued) **1000188823**

Owner/Operator Type: Operator
Owner/Op start date: 01/01/0001
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/11/2000
Facility name: VITRAN EXPRESS
Classification: Small Quantity Generator

Date form received by agency: 06/12/1989
Facility name: VITRAN EXPRESS
Classification: Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110005869471

Environmental Interest/Information System
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.

G25 **DONGARY INVESTMENTS** **LUST** **S106655900**
4300 WEST 35TH ST. **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 1 of 2 in cluster G

Relative:
Higher

Actual:
594 ft.

LUST:

Incident Num:	903192
IL EPA Id:	0316585065
Product:	Uset Oil
IEMA Date:	10/30/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Dongary Investments
PRP Contact:	Eldon Yeutter
PRP Address:	3980 Quebec St., P.O. Box 7240
PRP City,St,Zip:	Denver, CO 80207
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

F26 **VITRAN EXPRESS** **RCRA-CESQG** **1004697112**
4200 W 35TH PLACE C **ILR000065003**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 4 in cluster F

Relative:
Lower

Actual:
593 ft.

RCRA-CESQG:

Date form received by agency:	06/07/1999
Facility name:	VITRAN EXPRESS
Facility address:	4200 W 35TH PLACE C CHICAGO, IL 60632
EPA ID:	ILR000065003
Mailing address:	4200 W 35TH PL CHICAGO, IL 60632
Contact:	ROBERT BUNNER
Contact address:	1600 W OLIVER ST INDIANAPOLIS, IN 46221
Contact country:	US
Contact telephone:	(317) 803-4062
Contact email:	Not reported
EPA Region:	05
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any

VITRAN EXPRESS (Continued) **1004697112**

time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	VITRAN EXPRESS
Owner/operator address:	1600 W OLIVER ST INDIANAPOLIS, IN 62221
Owner/operator country:	Not reported
Owner/operator telephone:	(317) 803-4062
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code: D001

Waste name: 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.

Waste code: D002

Waste name: 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.

Violation Status: No violations found

F27 **JEVIC TRANSPORTATION INC** **RCRA-NonGen** **1001404619**
4200 W 35TH PL/SITE B **FINDS** **ILR000060525**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 3 of 4 in cluster F

Relative:
Lower

Actual:
593 ft.

RCRA-NonGen:

Date form received by agency:	01/13/1999
Facility name:	JEVIC TRANSPORTATION INC
Facility address:	4200 W 35TH PL/SITE B CHICAGO, IL 60632
EPA ID:	ILR000060525
Mailing address:	PO BOX 5157/600 GREEK RD DELANCO, NJ 08075
Contact:	THOMAS PACIGA
Contact address:	PO BOX 5157/600 GREEK RD DELANCO, NJ 08075
Contact country:	US
Contact telephone:	(800) 257-0427
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	JEVIC TRANSPORTATION INC
Owner/operator address:	PO BOX 5157/700 GREEK RD DELANCO, NJ 08075
Owner/operator country:	Not reported
Owner/operator telephone:	(800) 257-0427
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D001
Waste name:	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,

JEVIC TRANSPORTATION INC (Continued) **1001404619**

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.

Violation Status: No violations found

FINDS:

Registry ID: 110003048283

Environmental Interest/Information System
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.

F28 **DONGARY INVESTMENTS INC** **RCRA-SQG** **1000462860**
4300 W 35TH PL **FINDS** **ILD984810218**
< 1/8 **CHICAGO, IL 60632** **LUST**
1 ft.

Site 4 of 4 in cluster F

Relative:
Lower

Actual:
593 ft.

RCRA-SQG:

Date form received by agency:	12/28/1990
Facility name:	DONGARY INVESTMENTS INC
Facility address:	4300 W 35TH PL CHICAGO, IL 60632
EPA ID:	ILD984810218
Mailing address:	4200 W 35TH ST CHICAGO, IL 60632
Contact:	TOM STECKEL
Contact address:	4200 W 35TH ST CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(312) 254-0818
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	DONGARY INVESTMENTS
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

DONGARY INVESTMENTS INC (Continued) **1000462860**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code: D001

Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110005883188

Environmental Interest/Information System

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:	892412
IL EPA Id:	0316585028
Product:	Gasoline, Deisel
IEMA Date:	11/22/1989
Project Manager:	Blumhorst
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Dongary Investments
PRP Contact:	Tom Steckel
PRP Address:	4200 West 35th Pl.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	Not reported
Site Classification:	Not reported

DONGARY INVESTMENTS INC (Continued) **1000462860**

Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	02/29/1992
45 Report Received:	02/29/1992
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**07/12/1996**
NFR Date Recorded:	Not reported

Incident Num:	903207
IL EPA Id:	0316585028
Product:	Deisel
IEMA Date:	10/31/1990
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Dongary Investments
PRP Contact:	Eldon Yeutter
PRP Address:	3980 Quebec St., Box 7240
PRP City,St,Zip:	Denver, CO 80207
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	01/02/1991
45 Report Received:	03/20/1991
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**03/29/1994**
NFR Date Recorded:	Not reported

G29 **ACE HARDWARE** **UST** **U003559015**
4300 W 35TH PL DIV OF MAERSK SERV BO **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 2 in cluster G

Relative:
Higher

Actual:
594 ft.

UST:

Facility ID:	2002281
Facility Status:	CLOSED
Facility Type:	**OTHER**
Owner Name:	Wonderview Corporation
Owner Id:	U0024693
Owner Address:	Po Box 1840
Owner City,St,Zip:	Boulder, CO 80306

Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/30/1990
OSFM First Notify Date:	3/17/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

ACE HARDWARE (Continued) **U003559015**

Tank Number:	10
Tank Capacity:	12000
Tank Substance:	Diesel Fuel
Last Used Date:	1/9/1990
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	11
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	11/29/1989
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	12
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	11/29/1989
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	13
Tank Capacity:	12000
Tank Substance:	Diesel Fuel
Last Used Date:	1/9/1990
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**

ACE HARDWARE (Continued) **U003559015**

Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	14
Tank Capacity:	1000
Tank Substance:	Not reported
Last Used Date:	10/28/1990
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	15
Tank Capacity:	550
Tank Substance:	Used Oil
Last Used Date:	10/28/1990
OSFM First Notify Date:	5/6/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	16
Tank Capacity:	12000
Tank Substance:	Diesel Fuel
Last Used Date:	5/31/1994
OSFM First Notify Date:	2/24/1994
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	2/26/1990
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	2
Tank Capacity:	10000

ACE HARDWARE (Continued) **U003559015**

Tank Substance:	Diesel Fuel
Last Used Date:	10/30/1990
OSFM First Notify Date:	3/17/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	3
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/30/1990
OSFM First Notify Date:	3/17/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	4
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	10/30/1990
OSFM First Notify Date:	3/17/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	5
Tank Capacity:	6000
Tank Substance:	Used Oil
Last Used Date:	9/1/1988
OSFM First Notify Date:	11/7/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**

ACE HARDWARE (Continued) **U003559015**

Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	6
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	9/1/1988
OSFM First Notify Date:	11/7/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	7
Tank Capacity:	4000
Tank Substance:	Used Oil
Last Used Date:	11/6/1990
OSFM First Notify Date:	11/16/1993
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	8
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	11/6/1990
OSFM First Notify Date:	11/16/1993
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	9
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	11/6/1990

ACE HARDWARE (Continued) **U003559015**

OSFM First Notify Date:	11/16/1993
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1970
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

E30 **R & L CARRIERS** **LUST** **S108649918**
4359 WEST 36TH STREET **LUST TRUST** **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 2 of 4 in cluster E

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	20070942
IL EPA Id:	0316585036
Product:	Deisel
IEMA Date:	07/10/2007
Project Manager:	Kuhlman
Project Manager Phone:	(217) 785-5715
Email:	Eric.Kuhlman@illinois.gov
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	09/07/2007
45 Report Received:	11/14/2007
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

LUST TRUST:

Facility Name:	**R & L CARRIERS**
Queue Date:	**11/25/2009**
Incident Number:	**20070942-57719**
Amount To Be Paid:	**5919.08**
Running Total:	**952812.53**
Date Approved:	**12/24/2009**
Pay Assignee:	**Not reported**

Facility Name:	**R & L CARRIERS**
Queue Date:	**12/20/2010**
Incident Number:	**20070942-59609**
Amount To Be Paid:	**2060**
Running Total:	**27803960.06**
Date Approved:	**03/02/2011**
Pay Assignee:	**Not reported**

E31 **SSCI JOINT VENTURE** **LUST** **1001649322**
4359 WEST 36TH ST. **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 3 of 4 in cluster E

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	903474
IL EPA Id:	0316585036
Product:	Non Petro
IEMA Date:	11/21/1990
Project Manager:	Kuhlman
Project Manager Phone:	(217) 785-5715
Email:	Eric.Kuhlman@illinois.gov
PRP Name:	SSCI Joint Venture
PRP Contact:	John Shore
PRP Address:	10875 Indelco Dr.
PRP City,St,Zip:	Cincinnati, OH 45241
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	09/08/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**07/28/2000**
NFR Date Recorded:	08/07/2000

E32 **R & L CARRIERS** **UST** **U004110553**
4359 W. 36TH STREET **N/A**
< 1/8 **CHICAGO, IL 60632**
1 ft.

Site 4 of 4 in cluster E

Relative:
Higher

Actual:
596 ft.

UST:

Facility ID:	2023985
Facility Status:	ACTIVE
Facility Type:	**TRUCKING COMPANY**
Owner Name:	R & L Carriers, Inc.
Owner Id:	U0027882
Owner Address:	600 Gillam Road PO Box 271
Owner City,St,Zip:	Wilmington, OH 45177
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	1/7/1992
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No
Tank Number:	2

R & L CARRIERS (Continued) **U004110553**

Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	1/7/1992
OSFM First Notify Date:	3/26/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	3
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	3/30/2007
OSFM First Notify Date:	2/27/1992
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1992
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	4
Tank Capacity:	5000
Tank Substance:	Dyed Diesel
Last Used Date:	3/30/2007
OSFM First Notify Date:	2/27/1992
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1992
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	5
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	6/4/2007
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	2/13/2007
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**

R & L CARRIERS (Continued) **U004110553**

Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	6
Tank Capacity:	20000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	6/4/2007
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	2/13/2007
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	7
Tank Capacity:	5000
Tank Substance:	Dyed Diesel
Last Used Date:	Not reported
OSFM First Notify Date:	6/4/2007
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	2/13/2007
Green Tag Decal:	**L007631**
Green Tag Issue Date:	**8/2/2010**
Green Tag Expire Date:	**12/31/2012**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

H33 **MIDWEST GENERATION CRAWFORD** **RCRA-SQG** **1007092686**
3501 S PULASKI RD **ILD044231470**
< 1/8 **CHICAGO, IL 60623**
0.001 mi.
5 ft. **Site 1 of 3 in cluster H**

Relative:
Higher

Actual:
594 ft.

RCRA-SQG:

Date form received by agency:	03/01/2011
Facility name:	MIDWEST GENERATION CRAWFORD
Facility address:	3501 S PULASKI AVE CHICAGO, IL 606234987
EPA ID:	ILD044231470
Mailing address:	3501 S PULASKI RD CHICAGO, IL 606234987
Contact:	DONALD A ISAACS
Contact address:	3501 S PULASKI AVE CHICAGO, IL 606234987
Contact country:	US
Contact telephone:	(773) 650-5489
Contact email:	DISAACS@MWGEN.COM
EPA Region:	05

MIDWEST GENERATION CRAWFORD (Continued) **1007092686**

Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: MIDWEST GENERATION EME LLC
Owner/operator address: 235 REMINGTON BLVD STE A
BOLINGBROOK, IL 60440
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/15/1999
Owner/Op end date: Not reported

Owner/operator name: MIDWEST GENERATION LLC
Owner/operator address: 3501 S PULASKI RD
CHICAGO, IL 60623
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 12/15/1999
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 10/04/2010
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Large Quantity Generator

Date form received by agency: 03/05/2010
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 03/01/2010

MIDWEST GENERATION CRAWFORD (Continued) **1007092686**

Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 09/09/2009
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 06/23/2009
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Large Quantity Generator

Date form received by agency: 05/12/2008
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 04/28/2008
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Large Quantity Generator

Date form received by agency: 04/01/2006
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 04/18/2005
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 01/22/2004
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 10/09/2002
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Small Quantity Generator

Date form received by agency: 01/01/2000
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Large Quantity Generator

Date form received by agency: 03/01/1994
Facility name: MIDWEST GENERATION CRAWFORD
Site name: COM ED CRAWFORD STATION
Classification: Large Quantity Generator

Date form received by agency: 03/01/1992
Facility name: MIDWEST GENERATION CRAWFORD
Site name: COM ED CRAWFORD STATION
Classification: Large Quantity Generator

Date form received by agency: 03/30/1990
Facility name: MIDWEST GENERATION CRAWFORD
Site name: COM ED CRAWFORD STATION
Classification: Large Quantity Generator

Date form received by agency: 11/18/1980
Facility name: MIDWEST GENERATION CRAWFORD
Classification: Not a generator, verified

MIDWEST GENERATION CRAWFORD (Continued) **1007092686**

Hazardous Waste Summary:

Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

Waste code: D009
Waste name: MERCURY

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: D040
Waste name: TRICHLOROETHYLENE

Waste code: U123
Waste name: FORMIC ACID (C,T)

Waste code: U210
Waste name: ETHENE, TETRACHLORO-

Waste code: U219
Waste name: THIOUREA

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:

Waste code: D001
Waste name: 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.
Amount (Lbs): 624

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS

MIDWEST GENERATION CRAWFORD (Continued) **1007092686**

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.

Amount (Lbs): 5750.7

Waste code: D035
Waste name: METHYL ETHYL KETONE
Amount (Lbs): 402

Waste code: D039
Waste name: TETRACHLOROETHYLENE
Amount (Lbs): 5

Waste code: U123
Waste name: FORMIC ACID (C,T)
Amount (Lbs): 73

Waste code: U210
Waste name: ETHENE, TETRACHLORO-
Amount (Lbs): 5

Waste code: U219
Waste name: THIOUREA
Amount (Lbs): 35

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 06/26/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

H34 **CRAWFORD STATION** **UST** **U000791320**
East **3501S PULASKI RD** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.008 mi.
41 ft. **Site 2 of 3 in cluster H**

Relative:
Higher

Actual:
594 ft.

UST:
Facility ID: 2022662
Facility Status: ACTIVE
Facility Type: **UTILITY**
Owner Name: Midwest Generation, L.L.C.
Owner Id: U0029150
Owner Address: 235 Remington Blvd., Suite A
Owner City,St,Zip: Bolingbrook, IL 60440

Tank Number: 499
Tank Capacity: 500
Tank Substance: Gasoline
Last Used Date: 10/1/1998
OSFM First Notify Date: 5/6/1986

CRAWFORD STATION (Continued) **U000791320**

Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K003835**
Green Tag Issue Date:	**9/17/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	500
Tank Capacity:	4000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	10/30/1998
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	10/1/1992
Green Tag Decal:	**K003835**
Green Tag Issue Date:	**9/17/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

H35 **COMED-CRAWFORD STATION** **Manufactured Gas Plants** **1008407322**
East **3501 SOUTH PULASKI AVENUE** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.008 mi.
41 ft. **Site 3 of 3 in cluster H**

Relative:
Higher

Actual:
594 ft.

Manufactured Gas Plants:
No additional information available

I36 **TRIANGLE REFINERIES INC** **UST** **U000174620**
East **3741 S PULASKI RD** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.015 mi.
81 ft. **Site 1 of 2 in cluster I**

Relative:
Lower

Actual:
579 ft.

UST:

Facility ID:	2008480
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Triangle Refineries Inc
Owner Id:	U0015230
Owner Address:	2211 Norfolk Ste 1100
Owner City,St,Zip:	Houston, TX 77098

Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	6/1/1977

TRIANGLE REFINERIES INC (Continued) **U000174620**

OSFM First Notify Date:	3/21/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	1500
Tank Substance:	Diesel Fuel
Last Used Date:	6/1/1980
OSFM First Notify Date:	3/21/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	3
Tank Capacity:	1000
Tank Substance:	Heating Oil
Last Used Date:	12/1/1973
OSFM First Notify Date:	1/1/1902
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

I37 **KERR MCGEE, REF TRIANGLE DIVISION** **NPDES** **S104526535**
East **3741 SOUTH PULASKI RD.** **LUST** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.015 mi.
81 ft. **Site 2 of 2 in cluster I**

Relative:
Lower

Actual:
579 ft.

NPDES:

Permit Id No:	ILR005420
Date Permit Issued:	5/1/2009
Type Of Permit:	Privately Owned Facility
Latitude:	+ 41 49' 32" 0
Longitude:	- 87 43' 26" 8
Facility Receiving Water:	CHI SAN/SHIP CNL
Effective Date:	5/1/2009
Expiration Date:	4/30/2014

KERR MCGEE, REF TRIANGLE DIVISION (Continued) **S104526535**

LUST:

Incident Num:	903173
IL EPA Id:	0316305085
Product:	Unleaded Gas, Deisel, Fuel Oil
IEMA Date:	10/26/1990
Project Manager:	Zuehlke
Project Manager Phone:	(217) 557-6937
Email:	Wayne.Zuehlke@illinois.gov
PRP Name:	Mike Dahl
PRP Contact:	Not reported
PRP Address:	P.O. Box 3367
PRP City,St,Zip:	Houston, TX 77253
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	2009-07-24
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

J38 **COM ED WEST TECH FAC** **RCRA-CESQG** **1000277116**
North **3400 S PULASKI** **FINDS** **ILD982625055**
< 1/8 **CHICAGO, IL 60623**
0.094 mi.
495 ft. **Site 1 of 3 in cluster J**

Relative:
Lower

Actual:
591 ft.

RCRA-CESQG:

Date form received by agency:	08/18/2009
Facility name:	COMED WEST TECH FAC
Facility address:	3400 S PULASKI CHICAGO, IL 60623
EPA ID:	ILD982625055
Mailing address:	10 S DEARBORN 35 FNW CHICAGO, IL 60603
Contact:	BRIAN MCCANN
Contact address:	10 S DEARBORN 35 FNW CHICAGO, IL 60603
Contact country:	US
Contact telephone:	(312) 394-4440
Contact email:	Not reported
EPA Region:	05
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

COM ED WEST TECH FAC (Continued) **1000277116**

hazardous waste

Owner/Operator Summary:

Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	COMED
Owner/operator address:	10 S DEARBORN 35 FNW CHICAGO, IL 60603
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 394-4440
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/21/1989
Facility name:	COMED WEST TECH FAC
Classification:	Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

Waste code:	D000
Waste name:	Not Defined

Waste code:	D001
Waste name:	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

COM ED WEST TECH FAC (Continued) **1000277116**

MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D000
Waste name: Not Defined

Waste code: D001
Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110005865395

Environmental Interest/Information System
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.

J39 **HINCHCLIFF JR WM & AGNES** **UST** **U000173649**
North **3400 S PULASKI RD** **N/A**
< 1/8 **CHICAGO, IL 60521**
0.094 mi.
495 ft. **Site 2 of 3 in cluster J**

Relative:
Lower

Actual:
591 ft.

UST:

Facility ID:	2002758
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Hinchcliff Jr William & Agnes
Owner Id:	U0006850
Owner Address:	46 Briarwood S
Owner City,St,Zip:	Oak Brook, IL 60521
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	3/9/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**

HINCHCLIFF JR WM & AGNES (Continued) **U000173649**

Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	3/9/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

J40 **WILLETT TRUCKING** **LUST** **1001918690**
North **3400 SOUTH PULASKI RD.** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.094 mi.
495 ft. **Site 3 of 3 in cluster J**

Relative:
Lower

Actual:
591 ft.

LUST:

Incident Num:	881615
IL EPA Id:	0316305088
Product:	Fuel Oil
IEMA Date:	12/06/1988
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Willett Freight Systems
PRP Contact:	Howard Walters
PRP Address:	3400 South Pulaski Rd.
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

41 WNW < 1/8 0.108 mi. 570 ft. | **DISPOSAL SYSTEMS INC**
4600 W 34TH ST
CICERO, IL 60804 | **RCRA-NonGen FINDS** | **1000348969**
ILT180013401

Relative: Higher

Actual: 598 ft.

RCRA-NonGen:

Date form received by agency:	12/28/2009
Facility name:	DISPOSAL SYSTEMS INC
Facility address:	4600 W 34TH ST CICERO, IL 60650
EPA ID:	ILT180013401
Mailing address:	4600 WEST 34TH ST CICERO, IL 60650
Contact:	HARRY HUIZENGA
Contact address:	4600 WEST 34TH ST CICERO, IL 60650
Contact country:	US
Contact telephone:	(312) 242-3008
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	HARRY HUIZENGA
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

DISPOSAL SYSTEMS INC (Continued) **1000348969**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 11/26/1980
Facility name: DISPOSAL SYSTEMS INC
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110006409911

Environmental Interest/Information System
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.

K42 **W E S ENTERPRISES** **UST** **U000791337**
North **3223 S KOLIN AVE** **HWAR** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.123 mi.
650 ft. **Site 1 of 2 in cluster K**

Relative:
Higher

Actual:
595 ft.

UST:
Facility ID: 2030853
Facility Status: CLOSED
Facility Type: **INDUSTRIAL / MANUFACTURING**
Owner Name: Wes Enterprises
Owner Id: U0020253
Owner Address: 32 Stonehenge Court
Owner City,St,Zip: Burr Ridge, IL 60521

Tank Number: 1
Tank Capacity: 4000
Tank Substance: Heating Oil
Last Used Date: 6/1/1990
OSFM First Notify Date: 7/1/1992
Tank Status: **Removed**
Red Tag Issue Date: Not reported
Install Date: 6/1/1955
Green Tag Decal: **Not reported**
Green Tag Issue Date: **Not reported**
Green Tag Expire Date: **Not reported**
Self Service Permit Inspection Date: **Not reported**
Self Service Permit Expire Date: **Not reported**
Fee Due: Not reported

Tank Number: 2
Tank Capacity: 1000
Tank Substance: Diesel Fuel

W E S ENTERPRISES (Continued) **U000791337**

Last Used Date:	4/1/1988
OSFM First Notify Date:	7/1/1992
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	4/1/1976
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

HWAR:

Location Telephone Number:	6306540110
Location Contact Name:	PHILLIP SEMMER
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41834660
Longitude In Decimal Degrees (Assumed Decimal):	087732740
Owner Or Alternate Company Name:	W E S ENTERPRISES
Owner Or Alternate Street Address:	32 STONEHENG CT
Owner Or Alternate Post Office Box:	Not reported
Owner Or Alternate City:	BURR RIDGE
Owner Or Alternate State:	IL
Owner Or Alternate Zip Code:	60521
Owner Or Alternate Telephone Number:	6306540110
Owner Or Alternate Contact Name:	PHILLIP SEMMER
Operator Or Alternate Company Name:	W E S ENTERPRISES
Operator Or Alternate Street Address:	32 STONEHENG CT
Operator Or Alternate Post Office Box:	Not reported
Operator Or Alternate City:	BURR RIDGE
Operator Or Alternate State:	IL
Operator Or Alternate Zip Code:	60521
Operator Or Alternate Telephone Number:	6306540110
Operator Or Alternate Contact Name:	PHILLIP SEMMER
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	Not reported
Primary NAIC System Code:	Not reported
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	Not reported
Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	E
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above):	Not reported
Haz Waste Permit Ind (S Indicates Activity):	Not reported
Solid Waste Permit Ind (S Indicates Activity):	Not reported
Used Tire Program Activity Ind (S Indicates Activity):	Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity):	Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity):	Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity):	Not reported
Lust Program Activity Ind (S Indicates Activity):	S
Lust Reimbursement Program Activity Ind (S Indicates Activity):	S
Site Remediation Program Activity Ind (S Indicates Activity):	Not reported
FSRS Activity Ind (S Indicates Activity):	Not reported
State Response Action Activity Ind (S Indicates Activity):	Not reported
Name And Address Change Date:	01/12/99
Hazardous Annual Report Company Name:	Not reported
Hazardous Annual Report Street Address:	Not reported

W E S ENTERPRISES (Continued) **U000791337**

Hazardous Annual Report Post Office Box:	Not reported
Hazardous Annual Report City:	Not reported
Hazardous Annual Report State:	Not reported
Hazardous Annual Report Zip Code:	Not reported
Hazardous Annual Report Telephone Number:	Not reported
Hazardous Annual Report Contact First Name:	Not reported
Hazardous Annual Report Contact Last Name:	Not reported
Hazardous Annual Report Contact Person Title Code:	Not reported
Hazardous Annual Report New Notifier Code:	Not reported
FIPS Country Code:	001
FIPS State Code:	17
FIPS County Code:	031
FIPS City Or Township Code:	630
IEPA Region Identifier:	2
Original Entry Date:	02/10/97
Change Date:	02/07/11
Primary USEPA Identification Number:	Not reported
Status:	Not reported
Code:	BP
Total Tanks:	Not reported

K43 **W.E.S. ENTERPRISES INC.** **LUST** **S104521664**
North **3223 SOUTH KOLIN AVE.** **N/A**
< 1/8 **CHICAGO, IL 60623**
0.123 mi.
650 ft. **Site 2 of 2 in cluster K**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	970144
IL EPA Id:	0316305121
Product:	Deisel, Other Petro
IEMA Date:	01/24/1997
Project Manager:	Harlow
Project Manager Phone:	(217) 524-7650
Email:	Robert.Harlow@illinois.gov
PRP Name:	W.E.S. Enterprises Inc.
PRP Contact:	Phillip W. Semmer
PRP Address:	32 Stonehenge Ct.
PRP City,St,Zip:	Burr Ridge, IL 60521
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	02/10/1997
45 Report Received:	03/11/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**08/13/1997**
NFR Date Recorded:	04/02/1998

44 West < 1/8 0.124 mi. 654 ft. | **CITIES SERVICE OIL CO** | **IMPDMENT** | **S105249060** **N/A**

, IL

Relative: Higher

Actual: 594 ft.

SIA:

Area:	0.00000000000
Perimeter:	0.00000000000
County FIPS Code:	031
Place Code:	14351
Type of Impoundment Facility:	INDUSTRIAL
SIA Number:	00120
# of impoundments at Site:	003
IEPA ID:	0
NPDES Permit #:	Not reported
SIC Code 2:	2992
Latitude:	414940
Longitude:	0874422
Date Facility Id'd and Inventoried:	41279
Land owner street address:	3737 S CICERO AVE
Land Owner City,St,Zip:	CICERO, IL 60650
Operator of impoundment:	Not reported
Operator address:	Not reported
Operator City,St,Zip:	0
State Abbreviation:	IL
County FIPS Code:	031
Place Code:	14351
Type of Impoundment Facility 2:	INDUSTRIAL
SIA Number:	00120
Unique impoundment Number:	001
Purpose For Impoundment:	TREATMENT
Explanation For Above:	SETTLING
Age of Impoundment in Years:	05
Impoundment Currently In Use:	Yes
# of years in Operation if In Use:	05
Unique Record # assigned by S. Schock:	P1022
Last Year of Operation if Not in Use:	0000
Surface Area of all impoundments (acres):	000000
Surface Area of all impoundments (acres):	0000000
Average Influent (Gal/day) Into Impoundment:	000000000
Year of Record for above (influent) average:	0000
Average Effluent (gal/day) out of impoundment:	000000000
Year of record for above (effluent) average:	0000
Year of record for above average:	000055000
Year of record for above average:	1972
Avg Effluent for all Impoundments at facility:	000000000
Year of Record for above Average:	0000
Bottom of Liner:	NONE
If Liner Type ?? Above, Thickness (inches):	000
Description of Liner Type If ?? Above:	Not reported
If Agricultural Impoundment, Type of Livestock:	Not reported
If Agricultural Impoundment, Average Daily # Livestock:	000000
Number of Monitoring Wells:	00
Frequency Of Groundwater Samplings:	Not reported
Explanation Of GW Sampling if Other:	Not reported
GW Quality Changes Detected:	Not reported
Seepage Affected Drnk Water Wells Within 1 Mile:	UNKNOWN
Site Features:	DL

CITIES SERVICE OIL CO (Continued) **S105249060**

Dun and Bradst # Identifying Facility Type 2: 096459268
Dun and Bradst # Identifying Operator Business 2: Not reported
Dun and Bradst # Identifying Facility Type 2: 096459268
Dun and Bradst # Identifying Operator Business 2: Not reported
SIC Code 2: 2992

45
North
1/8-1/4
0.134 mi.
706 ft.

Relative:
Higher

Actual:
598 ft.

BWAY
3200 S KILBOURN AVE
CHICAGO, IL 60623

RCRA-CESQG **1000418896**
TRIS **60623CNTRL32**
FINDS
LUST
UST
ENG CONTROLS
INST CONTROL
SRP

RCRA-CESQG:
Date form received by agency: 08/24/2010
Facility name: BWAY
Facility address: 3200 S KILBOURN AVE
CHICAGO, IL 60623
EPA ID: ILD005069711
Mailing address: 3200 S KILBOURNE AVE
CHICAGO, IL 60623
Contact: CHUCK CLEARY
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: (773) 890-3338
Contact email: Not reported
EPA Region: 05
Land type: Private
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No

BWAY (Continued) **1000418896**

Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 07/24/2008
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 05/29/2008
Facility name: BWAY
Site name: CENTRAL CAN CO INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 03/01/2008
Facility name: BWAY
Site name: CENTRAL CAN CO INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/2006
Facility name: BWAY
Site name: CENTRAL CAN CO INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/2004
Facility name: BWAY
Site name: CENTRAL CAN CO INC
Classification: Large Quantity Generator

Date form received by agency: 07/26/2002
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/2002
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/2000
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/1998
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/1996
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

BWAY (Continued) **1000418896**

Date form received by agency: 03/01/1994
Facility name: BWAY
Site name: CENTRAL CAN COMPANY
Classification: Large Quantity Generator

Date form received by agency: 03/01/1992
Facility name: BWAY
Site name: CENTRAL CAN COMPANY
Classification: Large Quantity Generator

Date form received by agency: 02/20/1990
Facility name: BWAY
Site name: CENTRAL CAN COMPANY
Classification: Large Quantity Generator

Date form received by agency: 08/15/1980
Facility name: BWAY
Site name: CENTRAL CAN CO
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: 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.

Facility Has Received Notices of Violations:
Regulation violated: SR - 722.134(c)
Area of violation: Generators - Pre-transport
Date violation determined: 02/08/1994
Date achieved compliance: 02/23/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/23/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 06/30/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/08/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 02/23/1994

BWAY (Continued) **1000418896**

Evaluation lead agency: State

FINDS:

Registry ID: 110000434708

Environmental Interest/Information System

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.

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).

US EPA 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.

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:	891879
IL EPA Id:	0316005287
Product:	Non Petro
IEMA Date:	09/25/1989
Project Manager:	Kohrmann
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Central Can Co.
PRP Contact:	Bob Kaiser
PRP Address:	3200 South Kilbourn
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	10/26/1989
45 Report Received:	10/29/1993

BWAY (Continued) **1000418896**

Section 57.5(g) Letter: Not reported
NFA/NFR Letter: 10/04/1995
NFR Date Recorded: Not reported

UST:
Facility ID: 2008246
Facility Status: CLOSED
Facility Type: INDUSTRIAL / MANUFACTURING
Owner Name: Central Can Co
Owner Id: U0002635
Owner Address: 3200 S Kilbourn Ave
Owner City,St,Zip: Chicago, IL 60623

Tank Number: 1
Tank Capacity: 1600
Tank Substance: Hazardous Substance
Last Used Date: Not reported
OSFM First Notify Date: 4/28/1986
Tank Status: Removed
Red Tag Issue Date: Not reported
Install Date: Not reported
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 2
Tank Capacity: 1600
Tank Substance: Hazardous Substance
Last Used Date: Not reported
OSFM First Notify Date: 4/28/1986
Tank Status: Removed
Red Tag Issue Date: Not reported
Install Date: Not reported
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported
Self Service Permit Expire Date: Not reported
Fee Due: Not reported

Tank Number: 3
Tank Capacity: 1700
Tank Substance: Hazardous Substance
Last Used Date: Not reported
OSFM First Notify Date: 4/28/1986
Tank Status: Removed
Red Tag Issue Date: Not reported
Install Date: Not reported
Green Tag Decal: Not reported
Green Tag Issue Date: Not reported
Green Tag Expire Date: Not reported
Self Service Permit Inspection Date: Not reported

BWAY (Continued) **1000418896**

Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	4
Tank Capacity:	2500
Tank Substance:	Hazardous Substance
Last Used Date:	Not reported
OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	5
Tank Capacity:	2500
Tank Substance:	Hazardous Substance
Last Used Date:	Not reported
OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	6
Tank Capacity:	24600
Tank Substance:	Heating Oil
Last Used Date:	12/1/1977
OSFM First Notify Date:	6/17/1992
Tank Status:	**Abandoned in place**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1959
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	7
Tank Capacity:	10000
Tank Substance:	Heating Oil
Last Used Date:	12/1/1977
OSFM First Notify Date:	6/17/1992

BWAY (Continued) **1000418896**

Tank Status:	**Abandoned in place**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

ENGINEERING CONTROLS:

Illinois Epa Id:	0316005287
NFR Letter:	07/08/2009
Date NFR Recorded:	07/17/2009
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Laura Artus
RA Company:	CenterPoint Properties Trust
RA Address:	1808 Swift Road
RA Secondary Address:	Not reported
RA City,St,Zip:	Oakbrook, IL 60523-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier
Worker Caution:	True
Acres:	10.5

Illinois Epa Id:	0316005287
NFR Letter:	07/09/2009
Date NFR Recorded:	07/17/2009
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Laura Artus
RA Company:	CenterPoint Properties Trust
RA Address:	1808 Swift Road
RA Secondary Address:	Not reported
RA City,St,Zip:	Oakbrook, IL 60523-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier
Worker Caution:	False
Acres:	8.76

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0316005287
NFR Letter:	07/08/2009
Date NFR Recorded:	07/17/2009
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Laura Artus
RA Company:	CenterPoint Properties Trust
RA Address:	1808 Swift Road
RA Secondary Address:	Not reported
RA City,St,Zip:	Oakbrook, IL 60523-
Institutional Controls:	Groundwater use restriction

BWAY (Continued) **1000418896**

Engineered Barriers:	Asphalt barrier
Worker Caution:	True
Acres:	10.5

Illinois EPA Id:	0316005287
NFR Letter:	07/09/2009
Date NFR Recorded:	07/17/2009
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Laura Artus
RA Company:	CenterPoint Properties Trust
RA Address:	1808 Swift Road
RA Secondary Address:	Not reported
RA City,St,Zip:	Oakbrook, IL 60523-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier
Worker Caution:	False
Acres:	8.76

SRP:

IL EPA Id:	0316005287
US EPA Id:	ILD005069711
Longitude:	-87.73757
Latitude:	41.83491
Contact Name:	Laura Artus
Contact Address:	1808 Swift Road
Contact Address2:	Not reported
Contact City,St,Zip:	Oakbrook, IL 60523-
Contact Phone:	(630) 586-8000
Date Enrolled:	02/07/2008
Point Of Contact:	Mark V. Castro
Consultant Company:	Carlson Environmental, Inc.
Consultant Address:	65 East Wacker Place
Consultant Address2:	Suite 1500
Consultant City,St,Zip:	Chicago, IL 60601-
Consultant Phone:	(312) 899-0634
Proj Mgr Assigned:	Landers
Sec. 4 Letter Date:	Not reported
NFR Recorded:	7/17/2009
Active:	False
Total Acres:	10.5
No Further Remediation Letter Dt:	7/8/2009
Remediation Applicant Co:	CenterPoint Properties Trust
Remediation Applicant Title:	Vice President
Remediation Applicant Name:	Ms. Laura Artus
Remediation Applicant Company:	CenterPoint Properties Trust
Remediation Applicant Address:	1808 Swift Road
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Oakbrook, IL 60523-
Illinois EPA:	0316005287
Site Name:	Central Can Company (North Parcel)
NFR Letter:	7/8/2009
NFR Letter Date Recorded:	7/17/2009
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction

BWAY (Continued) **1000418896**

Barrier:	Asphalt barrier
Worker Caution:	True
Acres:	10.5

Remediation Applicant Name:	Ms. Laura Artus
Remediation Applicant Company:	CenterPoint Properties Trust
Remediation Applicant Address:	1808 Swift Road
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Oakbrook, IL 60523-
Illinois EPA:	0316005287
Site Name:	Central Can Company (South Parcel)
NFR Letter:	7/9/2009
NFR Letter Date Recorded:	7/17/2009
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Asphalt barrier
Worker Caution:	False
Acres:	8.76

IL EPA Id:	0316005287
US EPA Id:	ILD005069711
Longitude:	-87.73757
Latitude:	41.83491
Contact Name:	Laura Artus
Contact Address:	1808 Swift Road
Contact Address2:	Not reported
Contact City,St,Zip:	Oakbrook, IL 60523-
Contact Phone:	(630) 586-8000
Date Enrolled:	02/07/2008
Point Of Contact:	Mark V. Castro
Consultant Company:	Carlson Environmental, Inc.
Consultant Address:	65 East Wacker Place
Consultant Address2:	Suite 1500
Consultant City,St,Zip:	Chicago, IL 60601-
Consultant Phone:	(312) 899-0634
Proj Mgr Assigned:	Landers
Sec. 4 Letter Date:	Not reported
NFR Recorded:	7/17/2009
Active:	False
Total Acres:	10.5
No Further Remediation Letter Dt:	7/9/2009
Remediation Applicant Co:	CenterPoint Properties Trust
Remediation Applicant Title:	Vice President
Remediation Applicant Name:	Ms. Laura Artus
Remediation Applicant Company:	CenterPoint Properties Trust
Remediation Applicant Address:	1808 Swift Road
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Oakbrook, IL 60523-
Illinois EPA:	0316005287
Site Name:	Central Can Company (North Parcel)
NFR Letter:	7/8/2009
NFR Letter Date Recorded:	7/17/2009
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction

BWAY (Continued) **1000418896**

Barrier:	Asphalt barrier
Worker Caution:	True
Acres:	10.5
Remediation Applicant Name:	Ms. Laura Artus
Remediation Applicant Company:	CenterPoint Properties Trust
Remediation Applicant Address:	1808 Swift Road
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Oakbrook, IL 60523-
Illinois EPA:	0316005287
Site Name:	Central Can Company (South Parcel)
NFR Letter:	7/9/2009
NFR Letter Date Recorded:	7/17/2009
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Asphalt barrier
Worker Caution:	False
Acres:	8.76

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46 North 1/8-1/4 0.153 mi. 808 ft. | **HELDERS MOTOR SER CO** | **UST** | **U000791549**
3201 S KOSTNER AVE | **HWAR** | **N/A**
CHICAGO, IL 60623

Relative: Higher

Actual: 596 ft.

UST:

Facility ID:	2001921
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Helders Motor Ser Co
Owner Id:	U0006658
Owner Address:	3201 S Kostner Ave
Owner City,St,Zip:	Chicago, IL 60623
Tank Number:	1
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	2/19/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported
Tank Number:	2
Tank Capacity:	2000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	2/19/1986
Tank Status:	**Removed**

HELDERS MOTOR SER CO (Continued) **U000791549**

Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	3
Tank Capacity:	2500
Tank Substance:	Gasoline
Last Used Date:	1/1/1955
OSFM First Notify Date:	1/1/1902
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

HWAR:

Location Telephone Number:	7735238501
Location Contact Name:	BOB HELDERS
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41834900
Longitude In Decimal Degrees (Assumed Decimal):	087733860
Owner Or Alternate Company Name:	HELDERS MOTOR SVC
Owner Or Alternate Street Address:	3201 S KOSTNER
Owner Or Alternate Post Office Box:	Not reported
Owner Or Alternate City:	CHICAGO
Owner Or Alternate State:	IL
Owner Or Alternate Zip Code:	60623
Owner Or Alternate Telephone Number:	7735238501
Owner Or Alternate Contact Name:	Not reported
Operator Or Alternate Company Name:	HELDERS MOTOR SVC
Operator Or Alternate Street Address:	3201 S KOSTNER
Operator Or Alternate Post Office Box:	Not reported
Operator Or Alternate City:	CHICAGO
Operator Or Alternate State:	IL
Operator Or Alternate Zip Code:	60623
Operator Or Alternate Telephone Number:	7735238501
Operator Or Alternate Contact Name:	Not reported
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	Not reported
Primary NAIC System Code:	Not reported
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	Not reported
Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	E
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above):	Not reported
Haz Waste Permit Ind (S Indicates Activity):	Not reported

HELDERS MOTOR SER CO (Continued) **U000791549**

Solid Waste Permit Ind (S Indicates Activity):	Not reported
Used Tire Program Activity Ind (S Indicates Activity):	Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity):	Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity):	Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity):	Not reported
Lust Program Activity Ind (S Indicates Activity):	Not reported
Lust Reimbursement Program Activity Ind (S Indicates Activity):	Not reported
Site Remediation Program Activity Ind (S Indicates Activity):	Not reported
FSRS Activity Ind (S Indicates Activity):	Not reported
State Response Action Activity Ind (S Indicates Activity):	Not reported
Name And Address Change Date:	03/18/04
Hazardous Annual Report Company Name:	Not reported
Hazardous Annual Report Street Address:	Not reported
Hazardous Annual Report Post Office Box:	Not reported
Hazardous Annual Report City:	Not reported
Hazardous Annual Report State:	Not reported
Hazardous Annual Report Zip Code:	Not reported
Hazardous Annual Report Telephone Number:	Not reported
Hazardous Annual Report Contact First Name:	Not reported
Hazardous Annual Report Contact Last Name:	Not reported
Hazardous Annual Report Contact Person Title Code:	Not reported
Hazardous Annual Report New Notifier Code:	Not reported
FIPS Country Code:	001
FIPS State Code:	17
FIPS County Code:	031
FIPS City Or Township Code:	630
IEPA Region Identifier:	2
Original Entry Date:	08/22/95
Change Date:	02/07/11
Primary USEPA Identification Number:	Not reported
Status:	Not reported
Code:	BP
Total Tanks:	Not reported

L47 **NU TEMP** **RCRA-SQG** **1000612393**
North **3348 S PULASKI** **FINDS** **ILD984826214**
1/8-1/4 **CHICAGO, IL 60638**
0.156 mi.
825 ft. **Site 1 of 6 in cluster L**

Relative:
Lower

Actual:
593 ft.

RCRA-SQG:

Date form received by agency:	05/13/1991
Facility name:	NU TEMP
Facility address:	3348 S PULASKI CHICAGO, IL 60638
EPA ID:	ILD984826214
Contact:	BARBARA COLOIA
Contact address:	3348 S PULASKI CHICAGO, IL 60638
Contact country:	US
Contact telephone:	(312) 847-2220
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

NU TEMP (Continued) **1000612393**

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	LAZAR MIKE
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code: D001
Waste name: 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.

Waste code: D008
Waste name: LEAD

Violation Status: No violations found

FINDS:

Registry ID: 110009378529

Environmental Interest/Information System
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.

L48 North 1/8-1/4 0.157 mi. 831 ft. | **NUTEMP INC.** **3348 SOUTH PULASKI RD.** **CHICAGO, IL 60638** | **LUST** | **S104524568** **N/A**

Site 2 of 6 in cluster L

Relative: Lower

Actual: 593 ft.

LUST:

Incident Num:	922535
IL EPA Id:	0316645038
Product:	Deisel
IEMA Date:	09/10/1992
Project Manager:	Kuhlman
Project Manager Phone:	(217) 785-5715
Email:	Eric.Kuhlman@illinois.gov
PRP Name:	Nutemp Inc.
PRP Contact:	Mike Lazar
PRP Address:	3348 South Pulaski Rd.
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	11/30/1992
45 Report Received:	11/16/1992
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**09/16/1999**
NFR Date Recorded:	10/04/1999

L49 North 1/8-1/4 0.157 mi. 831 ft. | **EDGCOMB METALS** **3348 S PULASKI RD** **CHICAGO, IL 60623** | **RCRA-NonGen** **FINDS** | **1000179545** **ILT180013708**

Site 3 of 6 in cluster L

Relative: Lower

Actual: 593 ft.

RCRA-NonGen:

Date form received by agency:	12/23/1980
Facility name:	EDGCOMB METALS
Facility address:	3348 S PULASKI RD CHICAGO, IL 60623
EPA ID:	ILT180013708
Mailing address:	PO BOX 7940A CHICAGO, IL 60680
Contact:	ALBERT STRIZZI
Contact address:	PO BOX 7940A CHICAGO, IL 60680
Contact country:	US
Contact telephone:	(312) 247-7700
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	EDGCOMB METALS
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private

EDGCOMB METALS (Continued) **1000179545**

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: K062
Waste name: SPENT PICKLE LIQUOR GENERATED BY STEEL FINISHING OPERATIONS OF FACILITIES WITHIN THE IRON AND STEEL INDUSTRY (SIC CODES 331 AND 332).

Violation Status: No violations found

FINDS:

Registry ID: 110003064282

Environmental Interest/Information System
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.

L50 North 1/8-1/4 0.157 mi. 831 ft. | **NUTEMP INC**
3348 S PULASKI RD
CHICAGO, IL 60623

Site 4 of 6 in cluster L

UST | **U001142732**
N/A

Relative: Lower

Actual: 593 ft.

UST:

Facility ID:	2014665
Facility Status:	CLOSED
Facility Type:	**INDUSTRIAL / MANUFACTURING**
Owner Name:	Nutemp Corp
Owner Id:	U0023874
Owner Address:	3348 S Pulaski
Owner City,St,Zip:	Chicago, IL 60623
Tank Number:	1
Tank Capacity:	15000
Tank Substance:	Diesel Fuel
Last Used Date:	1/1/1986
OSFM First Notify Date:	4/15/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1980
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported
Tank Number:	2
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	8/1/1981
OSFM First Notify Date:	4/15/1986
Tank Status:	**Abandoned in place**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1902
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported
Tank Number:	3
Tank Capacity:	8000
Tank Substance:	Heating Oil
Last Used Date:	1/1/1977
OSFM First Notify Date:	6/30/1992
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1902
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**

NUTEMP INC (Continued) **U001142732**

Self Service Permit Expire Date: **Not reported**
Fee Due: Not reported

M51 **CHICAGO CITY OF** **UST** **U003668071**
SSE **I 55 & PULASKI ROAD BRIDGE** **N/A**
1/8-1/4 **CHICAGO, IL 60623**
0.158 mi.
834 ft. **Site 1 of 2 in cluster M**

Relative:
Lower

Actual:
592 ft.

UST:

Facility ID:	2036924
Facility Status:	EXEMPT
Facility Type:	**NONE**
Owner Name:	Chicago City Of
Owner Id:	U0027062
Owner Address:	I 55 & Pulaski Road Bridge
Owner City,St,Zip:	Chicago, IL 60623
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Not reported
Last Used Date:	12/31/1973
OSFM First Notify Date:	1/1/1902
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported
Tank Number:	2
Tank Capacity:	10000
Tank Substance:	Not reported
Last Used Date:	12/31/1973
OSFM First Notify Date:	1/1/1902
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

L52 North 1/8-1/4 0.179 mi. 943 ft. | **BLITZ BODY**
3330 S PULASKI
CHICAGO, IL 60623

Site 5 of 6 in cluster L

RCRA-SQG FINDS | **1001960525 ILR000074641**

Relative: Higher

Actual: 594 ft.

RCRA-SQG:

Date form received by agency:	01/31/2000
Facility name:	BLITZ BODY
Facility address:	3330 S PULASKI CHICAGO, IL 60623
EPA ID:	ILR000074641
Contact:	RICHARD KRAMER
Contact address:	3330 S PULASKI CHICAGO, IL 60623
Contact country:	US
Contact telephone:	(312) 555-1212
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	BLITZ BODY INC
Owner/operator address:	3330 S PULASKI RD CHICAGO, IL 60623
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS

BLITZ BODY (Continued) **1001960525**

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.

Violation Status: No violations found

FINDS:

Registry ID: 110003055274

Environmental Interest/Information System

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.

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.

M53 **COMED MANHOLE** **RCRA-NonGen** **1012178769**
SSE **I-55 & PULASKI** **ILR000158451**
1/8-1/4 **CHICAGO, IL 60632**
0.191 mi.
1010 ft. **Site 2 of 2 in cluster M**

Relative:
Higher

Actual:
594 ft.

RCRA-NonGen:

Date form received by agency:	03/01/2010
Facility name:	COMED MANHOLE
Facility address:	I-55 & PULASKI CHICAGO, IL 60632
EPA ID:	ILR000158451
Mailing address:	THREE LINCOLN CTR 3RD FL OAKBROOK TERRACE, IL 60181
Contact:	NEENA HEMMADY
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(630) 576-6724
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator

COMED MANHOLE (Continued) **1012178769**

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	COMED
Owner/operator address:	3 LINCOLN CTR 3RD FL OAKBROOK TERRACE, IL 60181
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1976
Owner/Op end date:	Not reported

Owner/operator name:	COMED
Owner/operator address:	THREE LINCOLN CTR 3RD FL OAKBROOK TERRACE, IL 60181
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1976
Owner/Op end date:	Not reported

Owner/operator name:	COMED
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	06/30/2009
Owner/Op end date:	Not reported

Owner/operator name:	COMED
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	06/30/2009
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

COMED MANHOLE (Continued) **1012178769**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/30/2009
Facility name: COMED MANHOLE
Site name: COMED ENV DEPT
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D008
Waste name: LEAD

Waste code: D008
Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 6318

Violation Status: No violations found

L54 **DOUBLE A METALS INC** **CERCLIS** **1000401217**
North **3321 S PULASKI RD** **RCRA-NonGen** **ILD025352139**
1/8-1/4 **CHICAGO, IL 60623** **FINDS**
0.194 mi. **HWAR**
1026 ft. **Site 6 of 6 in cluster L** **AIRS**

Relative:
Higher

Actual:
594 ft.

CERCLIS:
Site ID: 0507696
EPA ID: ILD025352139
Facility County: COOK
Short Name: DOUBLE A METALS
Congressional District: 04
IFMS ID: A572
SMSA Number: 1600
USGC Hydro Unit: 07120003
Federal Facility: Not a Federal Facility
DMNSN Number: Not reported
Site Orphan Flag: N
RCRA ID: Y
USGS Quadrangle: Not reported
Site Init By Prog: Not reported
NFRAP Flag: Not reported
Parent ID: Not reported
RST Code: Not reported
EPA Region: 05
Classification: Not reported
Site Settings Code: Not reported
NPL Status: Not on the NPL
DMNSN Unit Code: Not reported

DOUBLE A METALS INC (Continued) **1000401217**

RBRAC Code: Not reported
RResp Fed Agency Code: Not reported
Non NPL Status: Referred to Removal - NFRAP
Non NPL Status Date: 20030916
Site Fips Code: 17031
CC Concurrence Date: Not reported
CC Concurrence FY: Not reported
Alias EPA ID: Not reported
Site FUDS Flag: Not reported

CERCLIS Site Contact Name(s):
Contact ID: 5270178.00000
Contact Name: CHARLES M. GEBIEN
Contact Tel: (312) 353-7645
Contact Title: On-Scene Coordinator (OSC)
Contact Email: Not reported

CERCLIS Site Alias Name(s):
Alias ID: 101
Alias Name: H WINTER METALS INC
Alias Address: Not reported
IL
Alias Comments: Not reported
Site Description: ABANDONED ALUMINUM SMELTER AND FOUNDRY CONTAINING WASTE PILES (0008), DRUMMED SOLVENTS AND COMPRESSED GAS CYLINDERS.

CERCLIS Assessment History:

Action Code: 001
Action: DISCOVERY
Date Started: Not reported
Date Completed: 09/30/1996
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001
Action: Notice Letters Issued
Date Started: Not reported
Date Completed: 01/08/1997
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Enforcement
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 002
Action: Notice Letters Issued

DOUBLE A METALS INC (Continued) **1000401217**

Date Started:	Not reported
Date Completed:	01/08/1997
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	REMOVAL
Date Started:	01/23/1997
Date Completed:	04/16/1997
Priority Level:	Cleaned up
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Primary
Urgency Indicator:	Time Critical
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	01/28/1998
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	01/28/1998
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	01/28/1998
Priority Level:	Not reported
Operable Unit:	SITEWIDE

DOUBLE A METALS INC (Continued) **1000401217**

Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	004
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	11/30/1998
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	007
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	10/15/1999
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	005
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	10/22/1999
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	006
Action:	ISSUE REQUEST LETTERS (104E)
Date Started:	Not reported
Date Completed:	11/18/1999
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Not reported
Urgency Indicator:	Not reported

DOUBLE A METALS INC (Continued) **1000401217**

Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001
Action: ADMINISTRATIVE ORDER ON CONSENT
Date Started: Not reported
Date Completed: 06/02/2000
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Enforcement
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001
Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 09/16/2003
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information
Operable Unit: SITEWIDE
Primary Responsibility: State, Fund Financed
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Click this hyperlink while viewing on your computer to access
19 additional US CERCLIS Financial: record(s) in the EDR Site Report.

RCRA-NonGen:
Date form received by agency: 04/01/2006
Facility name: DOUBLE A METALS INC
Facility address: 3321 S PULASKI RD
CHICAGO, IL 60623
EPA ID: ILD025352139
Contact: ENV COORDINATOR
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (773) 523-6330
Contact email: Not reported
EPA Region: 05
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212

DOUBLE A METALS INC (Continued) **1000401217**

Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	DOUBLE A METALS INC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1900
Owner/Op end date:	Not reported
Owner/operator name:	DOUBLE A METALS INC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1900
Owner/Op end date:	Not reported
Owner/operator name:	ARMSTRONG JAY
Owner/operator address:	ADDRESS NOT REPORTED
	CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/01/1998
Facility name:	DOUBLE A METALS INC
Site name:	DOUBLE A METALS

DOUBLE A METALS INC (Continued) **1000401217**

Classification: Large Quantity Generator

Date form received by agency: 08/29/1986
Facility name: DOUBLE A METALS INC
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: SR - 722.111
Area of violation: Generators - General
Date violation determined: 08/26/1993
Date achieved compliance: 12/06/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/23/1993
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 08/26/1993
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/26/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/06/1993
Evaluation lead agency: State

FINDS:

Registry ID: 110000888861

Environmental Interest/Information System
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.

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,

DOUBLE A METALS INC (Continued) **1000401217**

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.

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

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 it 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.

HWAR:

Location Telephone Number:	7735236330
Location Contact Name:	JAMES SERTICH
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41832780
Longitude In Decimal Degrees (Assumed Decimal):	087724090
Owner Or Alternate Company Name:	H WINTER METAL CO INC
Owner Or Alternate Street Address:	3321 S PULASKI RD
Owner Or Alternate Post Office Box:	Not reported
Owner Or Alternate City:	CHICAGO
Owner Or Alternate State:	IL
Owner Or Alternate Zip Code:	60623
Owner Or Alternate Telephone Number:	7732474427
Owner Or Alternate Contact Name:	Not reported
Operator Or Alternate Company Name:	H WINTER METAL CO INC
Operator Or Alternate Street Address:	3321 S PULASKI RD
Operator Or Alternate Post Office Box:	Not reported
Operator Or Alternate City:	CHICAGO
Operator Or Alternate State:	IL
Operator Or Alternate Zip Code:	60623
Operator Or Alternate Telephone Number:	7732474427
Operator Or Alternate Contact Name:	Not reported
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	9229
Primary NAIC System Code:	Not reported
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	E
Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	E
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported

DOUBLE A METALS INC (Continued) **1000401217**

Potentially Infectious Medical Waste Annual Report Ind (as above): Not reported
Haz Waste Permit Ind (S Indicates Activity): Not reported
Solid Waste Permit Ind (S Indicates Activity): Not reported
Used Tire Program Activity Ind (S Indicates Activity): Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity): Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity): Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity): Not reported
Lust Program Activity Ind (S Indicates Activity): Not reported
Lust Reimbursement Program Activity Ind (S Indicates Activity): Not reported
Site Remediation Program Activity Ind (S Indicates Activity): Not reported
FSRS Activity Ind (S Indicates Activity): Not reported
State Response Action Activity Ind (S Indicates Activity): Not reported
Name And Address Change Date: 01/15/08
Hazardous Annual Report Company Name: DOUBLE A METALS
Hazardous Annual Report Street Address: 3321 S PULASKI RD
Hazardous Annual Report Post Office Box: Not reported
Hazardous Annual Report City: CHICAGO
Hazardous Annual Report State: IL
Hazardous Annual Report Zip Code: 60623
Hazardous Annual Report Telephone Number: 7735236330
Hazardous Annual Report Contact First Name: JAMES
Hazardous Annual Report Contact Last Name: SERTICH
Hazardous Annual Report Contact Person Title Code: Z
Hazardous Annual Report New Notifier Code: Not reported
FIPS Country Code: 001
FIPS State Code: 17
FIPS County Code: 031
FIPS City Or Township Code: 630
IEPA Region Identifier: 2
Original Entry Date: 04/23/85
Change Date: 02/07/11
Primary USEPA Identification Number: ILD025352139
Status: Not reported
Code: BP
Total Tanks: Not reported

IL AIRS:
Facility ID: 3918
ID Number: 031600FIX
Year: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Tele: Not reported
Contact Extention: Not reported
Contact EMail: Not reported
Contact Fax: Not reported
Cease Operation Date: 2/4/1994
SIC Code: 3341
Address Type Code: LOC

N55 North 1/8-1/4 0.207 mi. 1094 ft. | **SCIENTIFIC CONTROL LABORATORIES**
3158 S KOLIN AVE
CHICAGO, IL 60023 | **RCRA-SQG** | **1009398720**
ILR000141598

Site 1 of 3 in cluster N

Relative: Higher

Actual: 596 ft.

RCRA-SQG:

Date form received by agency:	05/17/2006
Facility name:	SCIENTIFIC CONTROL LABORATORIES
Facility address:	3158 S KOLIN AVE CHICAGO, IL 60023
EPA ID:	ILR000141598
Contact:	JEFFREY ZAK
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(773) 254-2406
Telephone ext.:	26
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SCIENTIFIC CONTROL LABS
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1978
Owner/Op end date:	Not reported

Owner/operator name:	SCIENTIFIC CONTROL LABS
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1978
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No

SCIENTIFIC CONTROL LABORATORIES (Continued) **1009398720**

Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

Waste code: D002
Waste name: 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.

Waste code: D003
Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

Waste code: D006
Waste name: CADMIUM

Waste code: D007
Waste name: CHROMIUM

Waste code: D008
Waste name: LEAD

Waste code: D011
Waste name: SILVER

Violation Status: No violations found

N56 **MODERN PROCESS EQUIPMENT** **RCRA-SQG** **1000216414**
North **3150 S KOLIN AVE** **FINDS** **ILD005097001**
1/8-1/4 **CHICAGO, IL 60623**
0.217 mi.
1146 ft. **Site 2 of 3 in cluster N**

Relative:
Higher

Actual:
596 ft.

RCRA-SQG:
Date form received by agency: 09/28/1988
Facility name: MODERN PROCESS EQUIPMENT INC
Facility address: 3150 S KOLIN AVE
CHICAGO, IL 60623
EPA ID: ILD005097001
Contact: PHIL EPHRAIM
Contact address: 3150 S KOLIN AVE
CHICAGO, IL 60623
Contact country: US
Contact telephone: (312) 254-3929
Contact email: Not reported
EPA Region: 05
Classification: Small Small Quantity Generator

MODERN PROCESS EQUIPMENT (Continued) **1000216414**

Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	MODERN PROCESS EQUIP
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D000
Waste name:	Not Defined

Waste code:	D001
Waste name:	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.

MODERN PROCESS EQUIPMENT (Continued) **1000216414**

Waste code: D002
Waste name: 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.

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

FINDS:

Registry ID: 110005813405

Environmental Interest/Information System
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.

O57 **DAVID ARCHITECTURAL METALS INC** **RCRA-NonGen** **1006930420**
North **3100 S KILBORN** **ILR000122879**
1/8-1/4 **CHICAGO, IL 60623**
0.237 mi.
1251 ft. **Site 1 of 2 in cluster O**

Relative:
Higher

Actual:
602 ft.

RCRA-NonGen:
Date form received by agency: 04/01/2006
Facility name: DAVID ARCHITECTURAL METALS INC
Facility address: 3100 S KILBORN
CHICAGO, IL 60623
EPA ID: ILR000122879
Contact: ENV COORDINATOR
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (773) 376-3200
Contact email: Not reported
EPA Region: 05
Classification: Non-Generator

DAVID ARCHITECTURAL METALS INC (Continued) **1006930420**

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: DAVID ARCHITECTURAL METALS
Owner/operator address: 3100 S KILBORN
CHICAGO, IL 60623
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Owner/operator name: DAVID ARCHITECTURAL METALS
Owner/operator address: 3100 S KILBORN
CHICAGO, IL 60623
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Owner/operator name: DAVID ARCHITECTURAL METALS INC
Owner/operator address: 3100 S KILBORN
CHICAGO, IL 60623
Owner/operator country: Not reported
Owner/operator telephone: (773) 376-3200
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 07/29/2003
Owner/Op end date: Not reported

Owner/operator name: DAVID ARCHITECTURAL METALS INC
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1900
Owner/Op end date: Not reported

Owner/operator name: DAVID ARCHITECTURAL METALS INC
Owner/operator address: 3100 S KILBORN
CHICAGO, IL 60623
Owner/operator country: Not reported
Owner/operator telephone: (773) 376-3200
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/29/2003
Owner/Op end date: Not reported

Owner/operator name: DAVID ARCHITECTURAL METALS INC
Owner/operator address: Not reported
Not reported
Owner/operator country: US

DAVID ARCHITECTURAL METALS INC (Continued) **1006930420**

Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1900
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/01/2004
Facility name: DAVID ARCHITECTURAL METALS INC
Site name: DAVID ARCHITECTURAL METALS
Classification: Not a generator, verified

Date form received by agency: 07/29/2003
Facility name: DAVID ARCHITECTURAL METALS INC
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D008
Waste name: LEAD

Violation Status: No violations found

O58 **DAVID ARCHITECTURAL METALS INC** **UST** **U001629859**
North **3100 S KILBOURN AVE** **N/A**
1/8-1/4 **CHICAGO, IL 60623**
0.239 mi.
1261 ft. **Site 2 of 2 in cluster O**

Relative:
Higher

Actual:
602 ft.

UST:
Facility ID: 3030378
Facility Status: EXEMPT
Facility Type: **NONE**
Owner Name: David Architectural Metals Inc
Owner Id: U0019903
Owner Address: 3100 S Kilbourn Ave
Owner City,St,Zip: Chicago, IL 60623

Tank Number: 1
Tank Capacity: 5000
Tank Substance: Heating Oil

DAVID ARCHITECTURAL METALS INC (Continued) **U001629859**

Last Used Date:	1/1/1962
OSFM First Notify Date:	6/5/1992
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	1000
Tank Substance:	Heating Oil
Last Used Date:	1/1/1962
OSFM First Notify Date:	6/5/1992
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

P59 **CITIES SERVICE OIL** **IL NIPC** **S100790081**
West **N/A**
1/8-1/4 **CICERO, IL**
0.241 mi.
1273 ft. **Site 1 of 4 in cluster P**

Relative:
Lower

Actual:
590 ft.

Q60 **MOBIL CICERO LUBE PLANT** **LUST** **U000856230**
West **3801 SOUTH CICERO AVENUE** **UST** **N/A**
1/8-1/4 **CICERO, IL 60804**
0.245 mi.
1294 ft. **Site 1 of 6 in cluster Q**

Relative:
Lower

Actual:
593 ft.

LUST:

Incident Num:	902292
IL EPA Id:	0310510005
Product:	Non Petro
IEMA Date:	08/11/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Mobil Oil Corp.
PRP Contact:	Kevin Good
PRP Address:	P.O. Box 874
PRP City,St,Zip:	Joliet, IL 60434-0874
PRP Phone:	Not reported
Site Classification:	Not reported

MOBIL CICERO LUBE PLANT (Continued) **U000856230**

Section 57.5(g) Letter:	731
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

Incident Num:	911509
IL EPA Id:	0310510005
Product:	Uset Oil
IEMA Date:	06/04/1991
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Mobil Oil Corp.
PRP Contact:	Mike Holland
PRP Address:	P.O. Box 874
PRP City,St,Zip:	Joliet, IL 60434-0874
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

Incident Num:	903511
IL EPA Id:	0310510005
Product:	Non Petro
IEMA Date:	11/27/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Mobil Oil Corp.
PRP Contact:	Jerry Koomas
PRP Address:	P.O. Box 874
PRP City,St,Zip:	Joliet, IL 60434-0874
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

Incident Num:	922121
IL EPA Id:	0310510005
Product:	Gasoline
IEMA Date:	08/04/1992
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported

MOBIL CICERO LUBE PLANT (Continued) **U000856230**

PRP Name:	Mobil Oil Corp.
PRP Contact:	Bruce Waver
PRP Address:	P.O. Box 874
PRP City,St,Zip:	Joliet, IL 60434-0874
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	08/27/1992
45 Report Received:	02/17/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

UST:

Facility ID:	2021952
Facility Status:	CLOSED
Facility Type:	**PETROLEUM DISTRIBUTOR**
Owner Name:	Exxon Mobil Oil Corporation
Owner Id:	U0010471
Owner Address:	7300 West Friendly Avenue, P.O. Box 22087 CMS Mailstop F-76
Owner City,St,Zip:	Greensboro, NC 274202087

Tank Number:	1
Tank Capacity:	1000
Tank Substance:	Gasoline
Last Used Date:	6/1/1983
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	10
Tank Capacity:	4000
Tank Substance:	Oil/Water Separator
Last Used Date:	Not reported
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	11
Tank Capacity:	2000

MOBIL CICERO LUBE PLANT (Continued) **U000856230**

Tank Substance:	Heating Oil
Last Used Date:	6/1/1998
OSFM First Notify Date:	8/1/1990
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	12
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	6/1/1998
OSFM First Notify Date:	8/1/1990
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Last Used Date:	4/1/1985
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	3
Tank Capacity:	2000
Tank Substance:	Diesel Fuel
Last Used Date:	4/1/1985
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**

MOBIL CICERO LUBE PLANT (Continued) **U000856230**

Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	4
Tank Capacity:	1000
Tank Substance:	Motor Oil
Last Used Date:	6/1/1983
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	5
Tank Capacity:	2000
Tank Substance:	Used Oil
Last Used Date:	6/1/1981
OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	6
Tank Capacity:	2000
Tank Substance:	Not reported
Last Used Date:	7/1/1987
OSFM First Notify Date:	4/28/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	7
Tank Capacity:	4100
Tank Substance:	Gasoline
Last Used Date:	6/1/1998

MOBIL CICERO LUBE PLANT (Continued) **U000856230**

OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	8
Tank Capacity:	9400
Tank Substance:	Diesel Fuel
Last Used Date:	6/1/1998
OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	9
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	Not reported
OSFM First Notify Date:	4/28/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Q61 **MOBIL CICERO LUBE PLANT** **SRP** **S104491235**
West **3801 SOUTH CICERO AVENUE** **FINANCIAL ASSURANCE** **N/A**
1/8-1/4 **CICERO, IL 60650**
0.245 mi.
1294 ft. **Site 2 of 6 in cluster Q**

Relative:
Lower

Actual:
593 ft.

SRP:

IL EPA Id:	0310510005
US EPA Id:	ILD000815357
Longitude:	-87.74007
Latitude:	41.82837
Contact Name:	Michael Meola
Contact Address:	5224 West State Road 46
Contact Address2:	#339
Contact City,St,Zip:	Sanford, FL 32771-9230

MOBIL CICERO LUBE PLANT (Continued) **S104491235**

Contact Phone:	(407) 282-7762
Date Enrolled:	05/08/1996
Point Of Contact:	David G. Tully, P.E.
Consultant Company:	Groundwater & Environmental Services, Inc.
Consultant Address:	1050 Corporate Boulevard
Consultant Address2:	Suite C
Consultant City,St,Zip:	Aurora, IL 60505-
Consultant Phone:	(866) 455-2419
Proj Mgr Assigned:	Gross
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	True
Total Acres:	10.8517
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	ExxonMobil Oil Corporation
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

FINASS:

Region:	1
Facility Type:	Hazardous (Subtitle C)
Operation Status:	Certified Closed
EPA Number:	0310510005
US EPA Number:	ILD000815357
Financial Assurance Req?:	N

Q62
West
1/8-1/4
0.245 mi.
1294 ft.

MOBIL OIL CORPORATION CICERO LUBE PLANT **CERC-NFRAP** **1000253504**
3801 SOUTH CICERO AVENUE **CORRACTS** **60650MBLCC38**
CICERO, IL 60650 **RCRA-LQG**
TRIS

Site 3 of 6 in cluster Q

Relative:
Lower

Actual:
593 ft.

CERC-NFRAP:

Site ID:	0500094
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Alias Name(s):

Alias Name:	MOBIL OIL CORP CICERO LUBE PLT
Alias Address:	3801 S CICERO AVE CICERO, IL 60650

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

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:	10/01/1986
Priority Level:	Low priority for further assessment
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	03/03/1990
Priority Level:	NFRAP-Site does not qualify for the NPL based on existing information
Action:	ARCHIVE SITE
Date Started:	Not reported
Date Completed:	03/03/1990
Priority Level:	Not reported

CORRACTS:

EPA ID:	ILD000815357
EPA Region:	05
Area Name:	ENTIRE FACILITY
Actual Date:	03/31/1994
Action:	CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s):	324191 Petroleum Lubricating Oil and Grease Manufacturing
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	ILD000815357
EPA Region:	05
Area Name:	ENTIRE FACILITY
Actual Date:	05/01/2009
Action:	CA070NO - RFA Determination Of Need For An RFI, RFI is Not Necessary
NAICS Code(s):	324191 Petroleum Lubricating Oil and Grease Manufacturing
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	ILD000815357
EPA Region:	05
Area Name:	ENTIRE FACILITY
Actual Date:	05/17/1990
Action:	CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s):	324191 Petroleum Lubricating Oil and Grease Manufacturing
Original schedule date:	Not reported
Schedule end date:	Not reported
EPA ID:	ILD000815357
EPA Region:	05

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Area Name: ENTIRE FACILITY
Actual Date: 09/23/1986
Action: CA050 - RFA Completed
NAICS Code(s): 324191
Petroleum Lubricating Oil and Grease Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: ILD000815357
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): 324191
Petroleum Lubricating Oil and Grease Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-LQG:
Date form received by agency: 03/01/2010
Facility name: EXXON MOBIL CICERO LUBE PLT
Facility address: 3801 S CICERO AVE
CICERO, IL 608044575
EPA ID: ILD000815357
Contact: JOHN WIERZ
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (630) 662-5520
Contact email: Not reported
EPA Region: 05
Land type: Private
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: MOBIL OIL CORP
Owner/operator address: 600 WOODFIELD DR
CITY NOT REPORTED, IL 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 885-6123
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Owner/Op end date: Not reported

Owner/operator name: EXXON MOBIL CICERO LUBE PLT
Owner/operator address: 3801 S CICERO AVE
CICERO, IL 60804
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 12/01/1999
Owner/Op end date: Not reported

Owner/operator name: MOBIL OIL CORP
Owner/operator address: 600 WOODFIELD DR
SCHAUMBURG, IL 60196
Owner/operator country: Not reported
Owner/operator telephone: (312) 885-6123
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: EXXON MOBIL
Owner/operator address: 3801 S CICERO AVE
CICERO, IL 60804
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/01/1999
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/01/2008
Facility name: EXXON MOBIL CICERO LUBE PLT
Classification: Large Quantity Generator

Date form received by agency: 05/30/2007
Facility name: EXXON MOBIL CICERO LUBE PLT

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Classification: Small Quantity Generator

Date form received by agency: 03/01/2006
Facility name: EXXON MOBIL CICERO LUBE PLT
Classification: Large Quantity Generator

Date form received by agency: 03/02/2005
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: EXXON MOBIL
Classification: Large Quantity Generator

Date form received by agency: 03/01/2004
Facility name: EXXON MOBIL CICERO LUBE PLT
Classification: Small Quantity Generator

Date form received by agency: 03/01/2002
Facility name: EXXON MOBIL CICERO LUBE PLT
Classification: Large Quantity Generator

Date form received by agency: 03/01/2000
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP
Classification: Large Quantity Generator

Date form received by agency: 03/01/1998
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP
Classification: Large Quantity Generator

Date form received by agency: 03/01/1992
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP
Classification: Large Quantity Generator

Date form received by agency: 03/01/1990
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP
Classification: Large Quantity Generator

Date form received by agency: 11/18/1980
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP CICERO LUBE PLT
Classification: Not a generator, verified

Date form received by agency: 08/18/1980
Facility name: EXXON MOBIL CICERO LUBE PLT
Site name: MOBIL OIL CORP CICERO LUBE PLT
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: U012
Waste name: ANILINE (I,T)

Waste code: U037
Waste name: BENZENE, CHLORO-

Waste code: U044

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Waste name: CHLOROFORM

Waste code: U112
Waste name: ACETIC ACID ETHYL ESTER (I)

Waste code: U117
Waste name: ETHANE, 1,1'-OXYBIS-(I)

Waste code: U133
Waste name: HYDRAZINE (R,T)

Waste code: U134
Waste name: HYDROFLUORIC ACID (C,T)

Waste code: U144
Waste name: ACETIC ACID, LEAD(2+) SALT

Waste code: U151
Waste name: MERCURY

Waste code: U154
Waste name: METHANOL (I)

Waste code: U159
Waste name: 2-BUTANONE (I,T)

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE

Waste code: U211
Waste name: CARBON TETRACHLORIDE

Waste code: U220
Waste name: BENZENE, METHYL-

Waste code: U228
Waste name: ETHENE, TRICHLORO-

Waste code: U239
Waste name: BENZENE, DIMETHYL- (I,T)

Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: 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.

Waste code: F005
Waste name: 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.

Waste code: U154
Waste name: METHANOL (I)

Waste code: D001
Waste name: 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.

Waste code: D021
Waste name: CHLOROBENZENE

Waste code: D022
Waste name: CHLOROFORM

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: 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.

Waste code: D001
Waste name: 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.

Waste code: D018
Waste name: BENZENE

Waste code: D021
Waste name: CHLOROBENZENE

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: 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.

Waste code: F005

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Waste name: 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.

Waste code: D000
Waste name: Not Defined

Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: 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.

Waste code: F005
Waste name: 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

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

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.

Waste code: P030
Waste name: CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED

Waste code: U002
Waste name: ACETONE (I)

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:

Waste code: D001
Waste name: 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.
Amount (Lbs): 336.6

Waste code: D021
Waste name: CHLOROBENZENE
Amount (Lbs): 336.6

Waste code: D022
Waste name: CHLOROFORM
Amount (Lbs): 336.6

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 336.6

Waste code: F005
Waste name: 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.
Amount (Lbs): 336.6

Corrective Action Summary:

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Event date: 09/23/1986
Event: RFA Completed

Event date: 05/17/1990
Event: RFA Determination Of Need For An RFI, RFI is Necessary;

Event date: 09/27/1991
Event: CA Prioritization, Facility or area was assigned a low corrective action priority.

Event date: 03/31/1994
Event: CA Prioritization, Facility or area was assigned a low corrective action priority.

Event date: 05/01/2009
Event: RFA Determination Of Need For An RFI, RFI is Not Necessary;

Facility Has Received Notices of Violations:

Regulation violated: SR - 725.243(e)(10)
Area of violation: TSD - Financial Requirements
Date violation determined: 09/07/1989
Date achieved compliance: 06/05/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/03/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 724.251
Area of violation: TSD - Financial Requirements
Date violation determined: 09/07/1989
Date achieved compliance: 10/02/1990
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 05/11/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 724.251
Area of violation: TSD - Financial Requirements
Date violation determined: 09/07/1989
Date achieved compliance: 10/02/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/03/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:

Evaluation date: 11/04/2010
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/20/2009
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/30/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/22/2003
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/01/1998
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/17/1995
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/14/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/15/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/20/1992
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

MOBIL OIL CORPORATION CICERO LUBE PLANT (Continued) **1000253504**

Evaluation date:	10/18/1990
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	09/07/1989
Evaluation:	FINANCIAL RECORD REVIEW
Area of violation:	TSD - Financial Requirements
Date achieved compliance:	10/02/1990
Evaluation lead agency:	State
Evaluation date:	09/07/1989
Evaluation:	FINANCIAL RECORD REVIEW
Area of violation:	TSD - Financial Requirements
Date achieved compliance:	06/05/1990
Evaluation lead agency:	State
Evaluation date:	05/19/1989
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State

Q63 **MOBIL OIL LUBE PLANT** **Manufactured Gas Plants** **1008407353**
West **3801 SOUTH CICERO AVENUE** **N/A**
1/8-1/4 **CICERO, IL 60650**
0.245 mi.
1294 ft. **Site 4 of 6 in cluster Q**

Relative:
Lower

Actual:
593 ft.

Manufactured Gas Plants:
No additional information available

Q64 **CHEMICAL WASTE MGMT** **RCRA-NonGen** **1000299313**
West **3799 S CICERO AVE** **FINDS** **ILD981092406**
1/8-1/4 **CICERO, IL 60804**
0.245 mi.
1294 ft. **Site 5 of 6 in cluster Q**

Relative:
Lower

Actual:
593 ft.

RCRA-NonGen:

Date form received by agency:	06/12/2008
Facility name:	CHEMICAL WASTE MANAGEMENT INC
Facility address:	3799 S CICERO AVE CICERO, IL 608044537
EPA ID:	ILD981092406
Mailing address:	150 W 137TH ST RIVERDALE, IL 60627
Contact:	MATTHEW RADEK
Contact address:	150 W 137TH ST RIVERDALE, IL 60627
Contact country:	US
Contact telephone:	(312) 841-8600
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator

CHEMICAL WASTE MGMT (Continued) **1000299313**

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NAME NOT REPORTED
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/10/2007
Facility name: CHEMICAL WASTE MANAGEMENT INC
Classification: Large Quantity Generator

Date form received by agency: 08/07/1985
Facility name: CHEMICAL WASTE MANAGEMENT INC
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110006403123

Environmental Interest/Information System

CHEMICAL WASTE MGMT (Continued) **1000299313**

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.

P65 **CITGO PETROLEUM CORPORATION** **UST** **U000856209**
West **3737 S. CICERO AVENUE** **N/A**
1/8-1/4 **CICERO, IL 60650**
0.246 mi.
1300 ft. **Site 2 of 4 in cluster P**

Relative:
Lower

Actual:
590 ft.

UST:

Facility ID:	2009616
Facility Status:	ACTIVE
Facility Type:	**INDUSTRIAL / MANUFACTURING**
Owner Name:	Citgo Petroleum Corporation
Owner Id:	U0002992
Owner Address:	PO Box 4993
Owner City,St,Zip:	Houston, TX 772104993
Tank Number:	1
Tank Capacity:	2000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1978
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No
Tank Number:	10
Tank Capacity:	2000
Tank Substance:	Lube Oil
Last Used Date:	Not reported
OSFM First Notify Date:	10/3/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1966
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

Tank Number:	11
Tank Capacity:	2000
Tank Substance:	Lube Oil
Last Used Date:	Not reported
OSFM First Notify Date:	10/3/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1966
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	12
Tank Capacity:	2000
Tank Substance:	Lube Oil
Last Used Date:	12/1/1974
OSFM First Notify Date:	10/3/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1966
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	13
Tank Capacity:	2000
Tank Substance:	Diesel Fuel
Last Used Date:	12/1/1970
OSFM First Notify Date:	10/3/1988
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1956
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	14
Tank Capacity:	4000
Tank Substance:	Gasoline
Last Used Date:	12/1/1966
OSFM First Notify Date:	10/3/1988
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1951
Green Tag Decal:	**K007021**

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	15
Tank Capacity:	4000
Tank Substance:	Gasoline
Last Used Date:	12/1/1966
OSFM First Notify Date:	10/3/1988
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1951
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	16
Tank Capacity:	2000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	7/17/1989
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	9/1/1989
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	17
Tank Capacity:	1000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	7/17/1989
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	9/1/1989
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	18
Tank Capacity:	2500

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

Tank Substance:	Diesel Fuel
Last Used Date:	6/1/1960
OSFM First Notify Date:	7/7/1990
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1955
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	19
Tank Capacity:	2500
Tank Substance:	Gasoline
Last Used Date:	6/1/1960
OSFM First Notify Date:	7/7/1990
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1955
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	2
Tank Capacity:	2000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1978
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	20
Tank Capacity:	2500
Tank Substance:	Gasoline
Last Used Date:	6/1/1960
OSFM First Notify Date:	7/7/1990
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1955
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	21
Tank Capacity:	2500
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	7/7/1990
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1955
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	3
Tank Capacity:	2000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1971
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	4
Tank Capacity:	2000
Tank Substance:	Used Oil
Last Used Date:	Not reported
OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1972
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	5
Tank Capacity:	2000
Tank Substance:	Used Oil
Last Used Date:	Not reported

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1953
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	6
Tank Capacity:	2000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	5/2/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	8
Tank Capacity:	2000
Tank Substance:	Lube Oil
Last Used Date:	Not reported
OSFM First Notify Date:	10/3/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1971
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	9
Tank Capacity:	2000
Tank Substance:	Lube Oil
Last Used Date:	Not reported
OSFM First Notify Date:	10/3/1988
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1971
Green Tag Decal:	**K007021**
Green Tag Issue Date:	**2/9/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**

CITGO PETROLEUM CORPORATION (Continued) **U000856209**

Fee Due: No

P66 West 1/8-1/4 0.246 mi. 1300 ft. **CITGO PETROLEUM CORP 3737 S. CICERO AVE. CICERO, IL 60804** **RCRA-SQG TRIS FINDS LUST** **1000236080 60650CTGPT37**

Site 3 of 4 in cluster P

Relative: Lower

Actual: 590 ft.

RCRA-SQG:

Date form received by agency:	03/06/1992
Facility name:	CITGO PETROLEUM CORP
Facility address:	3737 S CICERO AVE CICERO, IL 60650
EPA ID:	ILD096459268
Contact:	LARRY LABAK
Contact address:	3737 S CICERO AVE CICERO, IL 60650
Contact country:	US
Contact telephone:	(708) 780-5914
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CITGO PETROLEUM CORP
Owner/operator address:	PO BOX 3758 TULSA, OK 74102
Owner/operator country:	Not reported
Owner/operator telephone:	(918) 495-4000
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

CITGO PETROLEUM CORP (Continued) **1000236080**

Hazardous Waste Summary:

Waste code: D000
Waste name: Not Defined

Waste code: D001
Waste name: 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.

Waste code: D005
Waste name: BARIUM

Waste code: D008
Waste name: LEAD

Waste code: F003
Waste name: 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.

Waste code: F005
Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110000435841

Environmental Interest/Information System
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

CITGO PETROLEUM CORP (Continued) **1000236080**

of the Clean Air Act.

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).

US EPA 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.

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.

US Facility Response Plan (FRP) contains plans for responding, to the maximum extent practical, to worst case discharges of oil.

LUST:

Incident Num:	901018
IL EPA Id:	0310515011
Product:	Fuel Oil
IEMA Date:	04/18/1990
Project Manager:	Lowder
Project Manager Phone:	(217) 785-5734
Email:	Mike.Lowder@illinois.gov
PRP Name:	Citgo Petroleum
PRP Contact:	Chuck Stark
PRP Address:	3737 South Cicero Ave.
PRP City,St,Zip:	Cicero, IL 60650
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	05/17/1990
45 Report Received:	04/12/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/25/1997**
NFR Date Recorded:	02/25/1998

Incident Num:	891714
IL EPA Id:	0310515011
Product:	Gasoline
IEMA Date:	09/07/1989
Project Manager:	Lowder
Project Manager Phone:	(217) 785-5734
Email:	Mike.Lowder@illinois.gov
PRP Name:	Citgo Petroleum
PRP Contact:	Chuck Stark
PRP Address:	3737 South Cicero Ave.

CITGO PETROLEUM CORP (Continued) **1000236080**

PRP City,St,Zip:	Chicago, IL 60650
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	10/01/1989
45 Report Received:	08/23/1993
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

Q67
West
1/8-1/4
0.247 mi.
1306 ft.

ROLLINS LEASING CORP.
3800 SOUTH CICERO AVE
STICKNEY, IL 60402

LUST **S103690314**
N/A

Site 6 of 6 in cluster Q

Relative:
Lower

Actual:
593 ft.

LUST:

Incident Num:	970560
IL EPA Id:	0310510017
Product:	Deisel, Uset Oil, Other Petro
IEMA Date:	04/01/1997
Project Manager:	Lowder
Project Manager Phone:	(217) 785-5734
Email:	Mike.Lowder@illinois.gov
PRP Name:	Rollins Leasing Corp.
PRP Contact:	Ralph Grant
PRP Address:	1 Rollins Plaza A, P.O. Box 1791
PRP City,St,Zip:	Wilmington, DE 19899
PRP Phone:	3024262700
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	04/22/1997
45 Report Received:	09/12/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**02/15/2000**
NFR Date Recorded:	02/28/2000

R68
West
1/8-1/4
0.248 mi.
1307 ft.

GENUINE PARTS CO.
3900 SOUTH CICERO AVE.
STICKNEY, IL 60402

LUST **S103690312**
N/A

Site 1 of 3 in cluster R

Relative:
Higher

Actual:
594 ft.

LUST:

Incident Num:	961965
IL EPA Id:	0310515136
Product:	Deisel, Other Petro
IEMA Date:	10/23/1996
Project Manager:	Charles
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Genuine Parts Co.
PRP Contact:	Robert Lewis
PRP Address:	2999 Circle 75 Pkwy.

GENUINE PARTS CO. (Continued) **S103690312**

PRP City,St,Zip:	Atlanta, GA 30339
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	11/13/1996
45 Report Received:	12/09/1996
Section 57.5(g) Letter:	07/08/1998
NFA/NFR Letter:	**07/08/1998**
NFR Date Recorded:	10/14/1998

R69
West
1/8-1/4
0.248 mi.
1307 ft.

BERRY BEARING CO **UST** **U003972035**
3900 S CICERO AVE **N/A**
STICKNEY, IL 60650

Site 2 of 3 in cluster R

Relative:
Higher

Actual:
594 ft.

UST:

Facility ID:	2028417
Facility Status:	CLOSED
Facility Type:	**INDUSTRIAL / MANUFACTURING**
Owner Name:	Berry Bearing Co
Owner Id:	U0001460
Owner Address:	3900 S Cicero Ave
Owner City,St,Zip:	Stickney, IL 60650

Tank Number:	1
Tank Capacity:	6000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1996
OSFM First Notify Date:	7/23/1991
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Last Used Date:	10/1/1996
OSFM First Notify Date:	7/23/1991
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

BERRY BEARING CO (Continued) **U003972035**

Tank Number:	3
Tank Capacity:	275
Tank Substance:	Heating Oil
Last Used Date:	12/1/1971
OSFM First Notify Date:	8/9/1996
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1901
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	4
Tank Capacity:	550
Tank Substance:	Heating Oil
Last Used Date:	12/1/1971
OSFM First Notify Date:	8/9/1996
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1902
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	5
Tank Capacity:	550
Tank Substance:	Heating Oil
Last Used Date:	12/1/1971
OSFM First Notify Date:	8/9/1996
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1902
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	6
Tank Capacity:	6000
Tank Substance:	Heating Oil
Last Used Date:	12/1/1971
OSFM First Notify Date:	8/9/1996
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1902
Green Tag Decal:	**Not reported**

BERRY BEARING CO (Continued) **U003972035**

Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	7
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	1/1/1972
OSFM First Notify Date:	11/4/1996
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

R70 **INTERSTATE MATERIAL CORP** **UST** **U001134618**
West **4000 S CICERO AVE** **N/A**
1/8-1/4 **STICKNEY, IL 60650**
0.248 mi.
1309 ft. **Site 3 of 3 in cluster R**

Relative:
Higher

Actual:
594 ft.

UST:

Facility ID:	2023374
Facility Status:	CLOSED
Facility Type:	**NONE**
Owner Name:	Interstate Material Corp
Owner Id:	U0007580
Owner Address:	4000 S Cicero Ave
Owner City,St,Zip:	Stickney, IL 60650

Tank Number:	1
Tank Capacity:	5000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	6/16/1986
Tank Status:	**Does Not Exist**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1959
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	5000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	6/16/1986

INTERSTATE MATERIAL CORP (Continued) **U001134618**

Tank Status:	**Does Not Exist**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1959
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	3
Tank Capacity:	5000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	6/16/1986
Tank Status:	**Does Not Exist**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1959
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

S71 **PASELLA, JOHN** **LUST** **S103293044**
West **3750 SOUTH CICERO AVE.** **N/A**
1/8-1/4 **STICKNEY, IL 60402**
0.248 mi.
1311 ft. **Site 1 of 2 in cluster S**

Relative:
Lower

Actual:
590 ft.

LUST:

Incident Num:	960986
IL EPA Id:	0313005026
Product:	Deisel
IEMA Date:	06/05/1996
Project Manager:	McGill
Project Manager Phone:	(217) 524-5137
Email:	Scott.McGill@illinois.gov
PRP Name:	John Pasella
PRP Contact:	Anthony Pasella
PRP Address:	3756 South Cicero Ave.
PRP City,St,Zip:	Cicero, IL 60650
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	01/26/2010
45 Report Received:	01/26/2010
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**03/10/2010**
NFR Date Recorded:	03/26/2010

P72 **TUXEDO JUNCTION** **RCRA-NonGen** **1000462629**
West **3738 S CICERO AVE** **FINDS** **ILD984807784**
1/8-1/4 **STICKNEY, IL 60402**
0.249 mi.
1313 ft. **Site 4 of 4 in cluster P**

Relative:
Lower

Actual:
590 ft.

RCRA-NonGen:

Date form received by agency:	11/20/1990
Facility name:	TUXEDO JUNCTION
Facility address:	3738 S CICERO AVE STICKNEY, IL 60402
EPA ID:	ILD984807784
Mailing address:	7665 LAWNDALE SUMMIT, IL 60501
Contact:	ROBERT DAVIS
Contact address:	7665 LAWNDALE SUMMIT, IL 60501
Contact country:	US
Contact telephone:	(708) 594-7700
Contact email:	Not reported
EPA Region:	05
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	M AND S TRANSPORT
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110005881689

Environmental Interest/Information System

TUXEDO JUNCTION (Continued) **1000462629**

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.

N73 **ART METAL PRODUCTS CO** **RCRA-NonGen** **1000124040**
North **3125 S KOLIN AVE** **FINDS** **ILD005065446**
1/8-1/4 **CHICAGO, IL 60623**
0.250 mi.
1319 ft. **Site 3 of 3 in cluster N**

Relative:
Higher

Actual:
596 ft.

RCRA-NonGen:

Date form received by agency:	04/07/1997
Facility name:	ART METAL PRODUCTS CO
Facility address:	3125 S KOLIN AVE CHICAGO, IL 60623
EPA ID:	ILD005065446
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	05
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	KUREK WALTER
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No

ART METAL PRODUCTS CO (Continued) **1000124040**

Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/16/1988
Facility name: ART METAL PRODUCTS CO
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 01/28/1997
Evaluation: COMPLIANCE ASSISTANCE VISIT
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110001816777

Environmental Interest/Information System
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.

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

ART METAL PRODUCTS CO (Continued) **1000124040**

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.

T74 **CHURCH OF LATTER DAY SAINTS** **LUST** **S104529772**
ENE **3250 SOUTH PULASKI** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.254 mi.
1340 ft. **Site 1 of 2 in cluster T**

Relative:
Lower

Actual:
592 ft.

LUST:

Incident Num:	991330
IL EPA Id:	0316305151
Product:	Other Petro
IEMA Date:	06/03/1999
Project Manager:	Schwartzkopf
Project Manager Phone:	(217) 557-8763
Email:	Lizz.Schwartzkopf@illinois.gov
PRP Name:	Church of Latter Day Saints
PRP Contact:	Matt Catlin
PRP Address:	135 Ambassador Dr.
PRP City,St,Zip:	Naperville, IL 60540
PRP Phone:	6303577228
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	07/07/1999
45 Report Received:	09/16/1999
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**09/23/2004**
NFR Date Recorded:	08/08/1988

T75 **MOJICI, HUMBERTO** **LUST** **S104002322**
ENE **3249 PULASKI RD.** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.256 mi.
1354 ft. **Site 2 of 2 in cluster T**

Relative:
Lower

Actual:
592 ft.

LUST:

Incident Num:	900284
IL EPA Id:	0316305038
Product:	Not reported
IEMA Date:	01/31/1991
Project Manager:	Ransdell
Project Manager Phone:	(217) 557-6938
Email:	James.Ransdell@illinois.gov
PRP Name:	Humberto Mojici
PRP Contact:	Not reported
PRP Address:	2427 South 58 Ct.
PRP City,St,Zip:	Cicero, IL 60650
PRP Phone:	Not reported
Site Classification:	Not reported

MOJICI, HUMBERTO (Continued) **S104002322**

Section 57.5(g) Letter:	731
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:	**01/21/2009**
NFR Date Recorded:	Not reported

U76 **GLEASON CRANE** **LUST** **S104530380**
West **3401 SOUTH CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.257 mi.
1355 ft. **Site 1 of 7 in cluster U**

Relative:
Higher

Actual:
598 ft.

LUST:

Incident Num:	20000178
IL EPA Id:	0310515327
Product:	Gasoline, Deisel
IEMA Date:	02/01/2000
Project Manager:	Ransdell
Project Manager Phone:	(217) 557-6938
Email:	James.Ransdell@illinois.gov
PRP Name:	Gleason Crane
PRP Contact:	Phil Rice
PRP Address:	3401 South Cicero
PRP City,St,Zip:	Cicero, IL 60804
PRP Phone:	7086567700
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	06/26/2002
45 Report Received:	06/26/2002
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

U77 **3401 S CICERO** **US BROWNFIELDS** **1012126986**
West **3401 S CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.257 mi.
1355 ft. **Site 2 of 7 in cluster U**

Relative:
Higher

Actual:
598 ft.

US BROWNFIELDS:

Recipient name:	Cicero, Town of
Grant type:	Assessment
Property name:	3401 S Cicero
Property #:	16-34-102-015-0000
Parcel size:	3.06
Latitude:	41.495284
Longitude:	-87.443335
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Entrance Point of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	85581
Start date:	Not reported

3401 S CICERO (Continued) **1012126986**

Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	2300
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	EPA
Cleanup funding entity:	Not reported
Grant type:	P
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Private
Current owner:	Not reported
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	Not reported
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Not reported
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported

3401 S CICERO (Continued) **1012126986**

Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
Unknown found:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	3.06
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported

S78
West
1/4-1/2
0.257 mi.
1358 ft.

M & S TRANSPORT INC **LUST** **U000782858**
3738 SOUTH CICERO AVENUE **UST** **N/A**
STICKNEY, IL 60804

Site 2 of 2 in cluster S

Relative:
Lower

Actual:
590 ft.

LUST:

Incident Num:	991459
IL EPA Id:	0310515323
Product:	Uset Oil
IEMA Date:	06/17/1999
Project Manager:	Malcom
Project Manager Phone:	(217) 524-9140
Email:	James.Malcom@illinois.gov
PRP Name:	M & S Transport Co.
PRP Contact:	Ronald Caccavallo
PRP Address:	3738 South Cicero
PRP City,St,Zip:	Cicero, IL 60650
PRP Phone:	7088635400
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	07/29/1999
45 Report Received:	08/17/1999
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**06/04/2003**
NFR Date Recorded:	11/12/2003

Incident Num:	960919
IL EPA Id:	0313005011
Product:	Gasoline, Deisel
IEMA Date:	05/28/1996
Project Manager:	Malcom
Project Manager Phone:	(217) 524-9140
Email:	James.Malcom@illinois.gov
PRP Name:	Tuxedo Junction
PRP Contact:	Robert Allen
PRP Address:	8695 Archer Rd., Unit #6
PRP City,St,Zip:	Willow Springs, IL 60480

M & S TRANSPORT INC (Continued) **U000782858**

PRP Phone:	7088391020
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	04/09/1999
45 Report Received:	04/09/1999
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

UST:

Facility ID:	2013987
Facility Status:	ACTIVE
Facility Type:	**SELF-SERVICE STATION**
Owner Name:	M&S Transport, Inc.
Owner Id:	U0021149
Owner Address:	3738 South Cicero Avenue
Owner City,St,Zip:	Stickney, IL 60804

Tank Number:	1
Tank Capacity:	8000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	3/25/1986
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	1
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	12/9/1998
OSFM First Notify Date:	3/25/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	7/7/1975
Green Tag Decal:	**M001038**
Green Tag Issue Date:	**4/18/2011**
Green Tag Expire Date:	**12/31/2013**
Self Service Permit Inspection Date:	**4/18/2011**
Self Service Permit Expire Date:	**12/31/2013**
Fee Due:	No

Tank Number:	2
Tank Capacity:	6000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	3/25/1986
Tank Status:	**Currently in use**

M & S TRANSPORT INC (Continued) **U000782858**

Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	2
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	12/9/1998
OSFM First Notify Date:	3/25/1986
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	10/9/1981
Green Tag Decal:	**M001038**
Green Tag Issue Date:	**4/18/2011**
Green Tag Expire Date:	**12/31/2013**
Self Service Permit Inspection Date:	**4/18/2011**
Self Service Permit Expire Date:	**12/31/2013**
Fee Due:	No

Tank Number:	3
Tank Capacity:	8300
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	3/25/1986
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	4
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	Not reported
OSFM First Notify Date:	3/25/1986
Tank Status:	**Currently in use**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

M & S TRANSPORT INC (Continued) **U000782858**

Tank Number:	5
Tank Capacity:	1000
Tank Substance:	Used Oil
Last Used Date:	12/9/1998
OSFM First Notify Date:	3/25/1986
Tank Status:	**Moved**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	6
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	12/9/1998
OSFM First Notify Date:	3/25/1986
Tank Status:	**Moved**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	7
Tank Capacity:	5000
Tank Substance:	Diesel Fuel
Last Used Date:	1/1/1981
OSFM First Notify Date:	3/25/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**
Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

Tank Number:	8
Tank Capacity:	10000
Tank Substance:	Diesel Fuel
Last Used Date:	Not reported
OSFM First Notify Date:	3/25/1986
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**K001106**

M & S TRANSPORT INC (Continued) **U000782858**

Green Tag Issue Date:	**9/18/2009**
Green Tag Expire Date:	**12/31/2011**
Self Service Permit Inspection Date:	**9/18/2009**
Self Service Permit Expire Date:	**12/31/2011**
Fee Due:	No

U79 **DNJ TRANSPORTATION, INC.** **LUST** **S105155343**
West **3411 SOUTH CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.257 mi.
1359 ft. **Site 3 of 7 in cluster U**

Relative:
Higher

Actual:
598 ft.

LUST:

Incident Num:	20011530
IL EPA Id:	0310515346
Product:	Gasoline
IEMA Date:	09/13/2001
Project Manager:	Schwartzkopf
Project Manager Phone:	(217) 557-8763
Email:	Lizz.Schwartzkopf@illinois.gov
PRP Name:	DNJ Transportation, Inc.
PRP Contact:	Job Tovo
PRP Address:	3411 South Cicero
PRP City,St,Zip:	Cicero, IL 60804
PRP Phone:	7086526700
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	10/02/2001
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**10/01/2002**
NFR Date Recorded:	03/14/2003

U80 **3435 S CICERO** **US BROWNFIELDS** **1014476135**
West **3435 S CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.258 mi.
1360 ft. **Site 4 of 7 in cluster U**

Relative:
Higher

Actual:
597 ft.

US BROWNFIELDS:

Recipient name:	Cicero, Town of
Grant type:	Assessment
Property name:	3435 S Cicero
Property #:	16-34-102-011-0000
Parcel size:	4.84
Latitude:	41.494939
Longitude:	-87.443664
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Facility/Monitoring Site Boundary Point
Datum:	World Geodetic System of 1984
ACRES property ID:	85621
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported

3435 S CICERO (Continued) **1014476135**

Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	2200
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	EPA
Cleanup funding entity:	Not reported
Grant type:	H
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Private
Current owner:	Not reported
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	U
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Not reported
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported

3435 S CICERO (Continued) **1014476135**

Surface water cleaned:	Not reported
Unknown found:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	4.84
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported

U81 **ARTHUR E. NELSON CO.** **LUST** **S104527282**
West **3435 SOUTH CICERO AVE** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.258 mi.
1360 ft. **Site 5 of 7 in cluster U**

Relative:
Higher

Actual:
597 ft.

LUST:

Incident Num:	900208
IL EPA Id:	0310515211
Product:	Deisel
IEMA Date:	01/23/1990
Project Manager:	Gaydosh
Project Manager Phone:	(217) 785-0231
Email:	Jay.Gaydosh@illinois.gov
PRP Name:	Arthur E. Nelson
PRP Contact:	Gordon Nelson
PRP Address:	18036 Gottschalk Ave.
PRP City,St,Zip:	Homewood, IL 60430
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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:	**02/22/2008**
NFR Date Recorded:	Not reported

U82 **3419 S CICERO** **US BROWNFIELDS** **1012126989**
West **3419 S CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.258 mi.
1360 ft. **Site 6 of 7 in cluster U**

Relative:
Higher

Actual:
598 ft.

US BROWNFIELDS:

Recipient name:	Cicero, Town of
Grant type:	Assessment
Property name:	3419 S Cicero
Property #:	16-34-102-019-0000

3419 S CICERO (Continued) **1012126989**

Parcel size:	3.35
Latitude:	41.494629
Longitude:	-87.442458
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Entrance Point of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	85641
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	1900
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	Not reported
Cleanup funding entity:	Not reported
Grant type:	P
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Private
Current owner:	Not reported
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	Not reported
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Not reported
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported

3419 S CICERO (Continued) **1012126989**

Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
Unknown found:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	3.35
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported

U83 **ROADCO TRANSPORTATION** **LUST** **S106984509**
West **3417 SOUTH CICERO AVENUE** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.258 mi.
1360 ft. **Site 7 of 7 in cluster U**

Relative:
Higher

Actual:
598 ft.

LUST:

Incident Num:	20101383
IL EPA Id:	0310515401
Product:	Gasoline
IEMA Date:	12/21/2010
Project Manager:	Not reported
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
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

Incident Num:	20101390
IL EPA Id:	0310515401

ROADCO TRANSPORTATION (Continued) **S106984509**

Product:	Gasoline
IEMA Date:	12/22/2010
Project Manager:	Not reported
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
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

Incident Num:	20110329
IL EPA Id:	0310515401
Product:	Gasoline
IEMA Date:	04/13/2011
Project Manager:	Not reported
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
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

Incident Num:	20050820
IL EPA Id:	0310515401
Product:	Deisel
IEMA Date:	06/14/2005
Project Manager:	Putrich
Project Manager Phone:	(217) 524-4827
Email:	Steve.Putrich@illinois.gov
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Non LUST Determination Letter:	Not reported
20 Report Received:	09/23/2005
45 Report Received:	09/23/2005

ROADCO TRANSPORTATION (Continued) **S106984509**

Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**08/04/2006**
NFR Date Recorded:	01/08/2007

V84
West
1/4-1/2
0.258 mi.
1360 ft.

SIGNAL DELIVERY SERVICE
3505 SOUTH CICERO AVE.
CICERO, IL 60804

LUST **S104528118**
N/A

Site 1 of 3 in cluster V

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	870385
IL EPA Id:	0310515141
Product:	Deisel
IEMA Date:	03/16/1987
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Mobil Oil Corp.
PRP Contact:	Cliff Dumas
PRP Address:	P.O. Box 874
PRP City,St,Zip:	Joliet, IL 60434-0874
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

V85
West
1/4-1/2
0.258 mi.
1360 ft.

WESTERN INDUSTRIES
3501 SOUTH CICERO AVE.
CICERO, IL 60804

LUST **S104530012**
N/A

Site 2 of 3 in cluster V

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	992140
IL EPA Id:	0310515081
Product:	Gasoline, Deisel, Uset Oil
IEMA Date:	09/15/1999
Project Manager:	Benanti
Project Manager Phone:	(217) 524-4649
Email:	Trent.Benanti@illinois.gov
PRP Name:	Western Industries
PRP Contact:	Gregory Longoria
PRP Address:	1740 Internationale Parkway
PRP City,St,Zip:	Woodridge, IL 60517
PRP Phone:	6309727770
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	09/27/1999
45 Report Received:	11/02/1999

WESTERN INDUSTRIES (Continued) **S104530012**

Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

Incident Num:	992430
IL EPA Id:	0310515081
Product:	Gasoline, Deisel, Uset Oil
IEMA Date:	10/27/1999
Project Manager:	Benanti
Project Manager Phone:	(217) 524-4649
Email:	Trent.Benanti@illinois.gov
PRP Name:	Western Industries
PRP Contact:	Gregory Longoria
PRP Address:	1740 Internationale Parkway
PRP City,St,Zip:	Woodridge, IL 60517
PRP Phone:	6309727770
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	03/02/2000
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

V86 **HOFF BROTHERS CARTAGE, INC.** **LUST** **S104521494**
West **3475 SOUTH CICERO AVE** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.258 mi.
1361 ft. **Site 3 of 3 in cluster V**

Relative:
Higher

Actual:
597 ft.

LUST:

Incident Num:	970918
IL EPA Id:	0310515303
Product:	Gasoline, Deisel
IEMA Date:	05/23/1997
Project Manager:	Charles
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Hoff Brothers Cartage, Inc.
PRP Contact:	Howard Hoff
PRP Address:	7660 West 62nd Pl.
PRP City,St,Zip:	Summit, IL 60501
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	07/21/1997
45 Report Received:	09/11/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**04/20/1998**
NFR Date Recorded:	09/21/1998

W87 **UNIVERSAL EDIBLE OILS** **LUST** **1001652911**
North **4421 WEST 31ST** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.260 mi.
1375 ft. **Site 1 of 2 in cluster W**

Relative:
Higher

Actual:
600 ft.

LUST:

Incident Num:	901811
IL EPA Id:	0316005291
Product:	Fuel Oil
IEMA Date:	07/02/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Universal Edible Oils
PRP Contact:	Dado Pugeda
PRP Address:	4421 West 31st St.
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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:	**04/21/2005**
NFR Date Recorded:	05/10/2005

Incident Num:	912248
IL EPA Id:	0316005291
Product:	Non Petro
IEMA Date:	08/12/1991
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Universal Edible Oils
PRP Contact:	Felicidado Pugeda
PRP Address:	4421 West 31st St.
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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:	**04/21/2005**
NFR Date Recorded:	05/10/2005

W88 **CENTRAL SOYA, INC.** **ENG CONTROLS** **S104491483**
North **4421 WEST 31ST STREET** **INST CONTROL** **N/A**
1/4-1/2 **CHICAGO, IL 60623** **SRP**
0.260 mi.
1375 ft. **Site 2 of 2 in cluster W**

Relative:
Higher

Actual:
600 ft.

ENGINEERING CONTROLS:

Illinois Epa Id:	0316005291
NFR Letter:	04/21/2005
Date NFR Recorded:	05/10/2005
Type Of Site:	Residential

CENTRAL SOYA, INC. (Continued) **S104491483**

Comprehensive / Focused:	Comprehensive
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Lynn Crivello
RA Company:	Chicago Public Schools
RA Address:	125 South Clark Street
RA Secondary Address:	16th Floor
RA City,St,Zip:	Chicago, IL 60603-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Clean soil barrier/Geotextile & gravel barrier/Asphalt barrier/Building foundati
Worker Caution:	False
Acres:	16.5

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0316005291
NFR Letter:	04/21/2005
Date NFR Recorded:	05/10/2005
Type Of Site:	Residential
Comprehensive / Focused:	Comprehensive
Remediation Applicant Title:	Ms.
Remediation Applicant Name:	Lynn Crivello
RA Company:	Chicago Public Schools
RA Address:	125 South Clark Street
RA Secondary Address:	16th Floor
RA City,St,Zip:	Chicago, IL 60603-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Clean soil barrier/Geotextile & gravel barrier/Asphalt barrier/Building foundati
Worker Caution:	False
Acres:	16.5

SRP:

IL EPA Id:	0316005291
US EPA Id:	ILR000037101
Longitude:	-87.73533
Latitude:	41.83491
Contact Name:	Timothy Martin
Contact Address:	125 South Clark Street
Contact Address2:	17th Floor
Contact City,St,Zip:	Chicago, IL 60603-
Contact Phone:	(773) 553-2900
Date Enrolled:	11/15/1999
Point Of Contact:	Ala E. Sassila, P.E.
Consultant Company:	Carnow, Conibear & Associates, Ltd.
Consultant Address:	333 West Wacker Drive
Consultant Address2:	Suite 1400
Consultant City,St,Zip:	Chicago, IL 60606-
Consultant Phone:	(312) 782-4486
Proj Mgr Assigned:	Salch
Sec. 4 Letter Date:	Not reported
NFR Recorded:	5/10/2005
Active:	False
Total Acres:	16.5
No Further Remediation Letter Dt:	4/21/2005
Remediation Applicant Co:	Chicago Public Schools
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Ms. Lynn Crivello
Remediation Applicant Company:	Chicago Public Schools

CENTRAL SOYA, INC. (Continued) **S104491483**

Remediation Applicant Address:	125 South Clark Street
Remediation Applicant Address 2:	16th Floor
Remediation Applicant City,St,Zip:	Chicago, IL 60603-
Illinois EPA:	0316005291
Site Name:	Central Soya, Inc.
NFR Letter:	4/21/2005
NFR Letter Date Recorded:	5/10/2005
Site Type:	Residential
Comprehensive/Focused:	Comprehensive
Institutional Controls:	Groundwater use restriction
Barrier:	Clean soil barrier/Geotextile & gravel barrier/Asphalt barrier/Building foundati
Worker Caution:	False
Acres:	16.5

X89 **NORTHWESTERN PLATING WORKS** **CERCLIS** **1009396034**
North **3114 SOUTH KOLIN AVE.** **ILN000510086**
1/4-1/2 **CHICAGO, IL 60623**
0.262 mi.
1384 ft. **Site 1 of 2 in cluster X**

Relative:
Higher

Actual:
596 ft.

CERCLIS:

Site ID:	0510086
EPA ID:	ILN000510086
Facility County:	COOK
Short Name:	NORTHWESTERN PLATING WORK
Congressional District:	04
IFMS ID:	B5DP
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility
DMNSN Number:	Not reported
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	S
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	05
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)
Non NPL Status Date:	20060308
Site Fips Code:	17031
CC Concurrence Date:	Not reported
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS Site Contact Name(s):

Contact ID:	5270375.00000
Contact Name:	MICHAEL HARRIS

NORTHWESTERN PLATING WORKS (Continued) **1009396034**

Contact Tel: (312) 886-0760
Contact Title: On-Scene Coordinator (OSC)
Contact Email: Not reported

Contact ID: 5272804.00000
Contact Name: JAMES MITCHELL
Contact Tel: (312) 353-9537
Contact Title: On-Scene Coordinator (OSC)
Contact Email: Not reported

Alias Comments: Not reported
Site Description: An abandoned plating shop with large amounts of plating waste stored at the facility in an unsafe manner. The wastes are contained within the building. There are drains; however, sampling has not indicated a release to the sewers.

CERCLIS Assessment History:

Action Code: 001
Action: REMOVAL
Date Started: 07/31/2006
Date Completed: 12/21/2006
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Primary
Urgency Indicator: Time Critical
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Click this hyperlink while viewing on your computer to access
68 additional US CERCLIS Financial: record(s) in the EDR Site Report.

Y90 WNW 1/4-1/2 0.264 mi. 1392 ft. | **TURKS MOTOR EXPRESS/RS MGT.** | **LUST** | **S104528235**
3333 SOUTH CICERO AVE. | **N/A**
CICERO, IL 60804

Site 1 of 5 in cluster Y

Relative: Higher

Actual: 600 ft.

LUST:
Incident Num: 971827
IL EPA Id: 0310515305
Product: Deisel, Uset Oil
IEMA Date: 09/26/1997
Project Manager: Kaiser
Project Manager Phone: (217) 524-4650
Email: Karl.Kaiser@illinois.gov
PRP Name: Turks Motor Express/RS Mgt.
PRP Contact: Robert Turk
PRP Address: 3333 South Cicero Ave.
PRP City,St,Zip: Cicero, IL 60804
PRP Phone: 7086568282
Site Classification: Not reported
Section 57.5(g) Letter: 732
Non LUST Determination Letter: Not reported
20 Report Received: 03/30/1998
45 Report Received: 03/30/1998
Section 57.5(g) Letter: Not reported
NFA/NFR Letter: 10/04/2000

TURKS MOTOR EXPRESS/RS MGT. (Continued) **S104528235**

NFR Date Recorded: 11/02/2000

Y91 **NATIONAL JOCKEY CLUB** **SRP** **S104562034**
WNW **3311 SOUTH CICERO AVENUE** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.274 mi.
1445 ft. **Site 2 of 5 in cluster Y**

Relative:
Higher

Actual:
600 ft.

SRP:

IL EPA Id:	0310515335
US EPA Id:	Not reported
Longitude:	-87.74116
Latitude:	41.83237
Contact Name:	Michael Belletire
Contact Address:	3301 South Laramie Street
Contact Address2:	Not reported
Contact City,St,Zip:	Cicero, IL 60804-
Contact Phone:	(773) 242-1121
Date Enrolled:	08/01/2000
Point Of Contact:	Karl E. Meier, P.E.
Consultant Company:	Raymond-Beling, Inc.
Consultant Address:	312 North Clark Street
Consultant Address2:	Suite 1100
Consultant City,St,Zip:	Chicago, IL 60610-
Consultant Phone:	(312) 670-4790
Proj Mgr Assigned:	Catlin
Sec. 4 Letter Date:	Not reported
NFR Recorded:	5/24/2001
Active:	False
Total Acres:	2.5
No Further Remediation Letter Dt:	5/10/2001
Remediation Applicant Co:	National Jockey Club
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Mr. Michael Belletire
Remediation Applicant Company:	National Jockey Club
Remediation Applicant Address:	3301 South Laramie Street
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Cicero, IL 60804-
Illinois EPA:	0310515335
Site Name:	National Jockey Club
NFR Letter:	5/10/2001
NFR Letter Date Recorded:	5/24/2001
Site Type:	Residential
Comprehensive/Focused:	Focused
Institutional Controls:	Not reported
Barrier:	Not reported
Worker Caution:	False
Acres:	2.5

Y92 WNW 1/4-1/2 0.274 mi. 1445 ft. | **JONES TRUCKING** | **LUST** | **S104527077** | **N/A**

3311 SOUTH CICERO AVE
CICERO, IL 60804

Site 3 of 5 in cluster Y

Relative: Higher

Actual: 600 ft.

LUST:

Incident Num:	900997
IL EPA Id:	0310515179
Product:	Deisel
IEMA Date:	04/17/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Jones Trucking
PRP Contact:	Larry May
PRP Address:	610 East Emma Ave.
PRP City,St,Zip:	Springdale, AR 62764
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

Y93 WNW 1/4-1/2 0.274 mi. 1447 ft. | **BRIGHTLY GALVANIZED PRODUCTS, INC.** | **SRP** | **S108282977** | **N/A**

3330 SOUTH CICERO AVENUE
CICERO, IL 60804

Site 4 of 5 in cluster Y

Relative: Higher

Actual: 600 ft.

SRP:

IL EPA Id:	0310515010
US EPA Id:	ILD005126297
Longitude:	-87.74471
Latitude:	41.83247
Contact Name:	Laxman Alreja
Contact Address:	625 Mills Road
Contact Address2:	Not reported
Contact City,St,Zip:	Joliet, IL 60433-
Contact Phone:	(815) 341-8469
Date Enrolled:	01/29/2007
Point Of Contact:	Kurt Schlichting
Consultant Company:	RK & Associates, Inc.
Consultant Address:	2 South 631 Route 59
Consultant Address2:	Suite B
Consultant City,St,Zip:	Warrenville, IL 60555-
Consultant Phone:	(630) 393-9000
Proj Mgr Assigned:	Gross
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	1.86
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	Brightly Galvanized Products, Inc.
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Not reported

BRIGHTLY GALVANIZED PRODUCTS, INC. (Continued) **S108282977**

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

Y94 **3330 S. CICERO** **US BROWNFIELDS** **1012126985**
WNW **3330 S. CICERO** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.274 mi.
1447 ft. **Site 5 of 5 in cluster Y**

Relative:
Higher

Actual:
600 ft.

US BROWNFIELDS:

Recipient name:	Cicero, Town of
Grant type:	Assessment
Property name:	3330 S. Cicero
Property #:	16-33-220-008, 16-33-220-009
Parcel size:	2.55
Latitude:	41.495669
Longitude:	-87.444068
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Entrance Point of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	85541
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	2000
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	EPA
Cleanup funding entity:	Not reported
Grant type:	H
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Private
Current owner:	Not reported
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	Not reported
IC Category proprietary controls:	Not reported

3330 S. CICERO (Continued) **1012126985**

IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Not reported
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Y
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
Unknown found:	Y
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	2.55
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported

X95
North
1/4-1/2
0.284 mi.
1502 ft.

EISERMAN, MICHAEL H.
4358 WEST 31ST ST.
CHICAGO, IL 60623

Site 2 of 2 in cluster X

LUST **S104525994**
N/A

Relative:
Higher

Actual:
597 ft.

LUST:

Incident Num:	911354
IL EPA Id:	0316305059
Product:	Uset Oil
IEMA Date:	05/21/1991
Project Manager:	Kasa
Project Manager Phone:	(217) 557-7048
Email:	Steve.Kasa@illinois.gov
PRP Name:	Michael H. Eiserman
PRP Contact:	Not reported
PRP Address:	803 West Hillgrove Ave.
PRP City,St,Zip:	La Grange, IL 60525
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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

96
SSE
1/4-1/2
0.288 mi.
1519 ft.

ARTHUR E. NELSON, ESTATE OF
3905 SOUTH PULASKI RD.
CHICAGO, IL 60632

LUST **S104521551**
N/A

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	970656
IL EPA Id:	0316585042
Product:	Gasoline
IEMA Date:	04/17/1997
Project Manager:	Harlow
Project Manager Phone:	(217) 524-7650
Email:	Robert.Harlow@illinois.gov
PRP Name:	Estate of Arthur E. Nelson
PRP Contact:	Gordon or Donald Nelson
PRP Address:	18036 Gottschalk Ave., P.O. Box 1489
PRP City,St,Zip:	Homewood, IL 60430-0489
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	04/24/1997
45 Report Received:	06/02/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/08/1997**
NFR Date Recorded:	09/24/1998

97
SSE
1/4-1/2
0.293 mi.
1549 ft.

CESCOE
3939 KARLOV
CHICAGO, IL 60632

LUST **S104189708**
N/A

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	890697
IL EPA Id:	0316585027
Product:	Unleaded Gas, Deisel
IEMA Date:	04/29/1989
Project Manager:	Barrett
Project Manager Phone:	(217) 782-4869
Email:	John.D.Barrett@illinois.gov
PRP Name:	Cescoe-Englewood Elec
PRP Contact:	John Ainley
PRP Address:	3937 Karlov
PRP City,St,Zip:	Chicago, IL
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
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:	**01/15/2008**
NFR Date Recorded:	Not reported

98
WNW
1/4-1/2
0.360 mi.
1902 ft.

3417 S 48TH CT
3417 S 48TH CT
CICERO, IL 60804

US BROWNFIELDS **1012126988**
N/A

Relative:
Higher

Actual:
609 ft.

US BROWNFIELDS:

Recipient name:	Cicero, Town of
Grant type:	Assessment
Property name:	3417 S 48th Ct
Property #:	Not reported
Parcel size:	2.08
Latitude:	41.495035
Longitude:	-87.442365
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Center of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	85622
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	1900
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	EPA
Cleanup funding entity:	Not reported

3417 S 48TH CT (Continued) **1012126988**

Grant type:	H
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Private
Current owner:	Not reported
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	Not reported
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Not reported
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
Unknown found:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	2.08

3417 S 48TH CT (Continued) **1012126988**

Future use greenspace acreage: Not reported
Future use residential acreage: Not reported
Future use commercial acreage: Not reported
Future use industrial acreage: Not reported
Greenspace acreage and type: Not reported
Superfund Fed. landowner flag: Not reported

Z99 **3101-11 SOUTH PULASKI LLC** **LUST** **S109147753**
NE **3105 SOUTH PULASKI AVENUE** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.363 mi.
1915 ft. **Site 1 of 2 in cluster Z**

Relative:
Lower

Actual:
593 ft.

LUST:

Incident Num:	20080966
IL EPA Id:	0316306430
Product:	Uset Oil
IEMA Date:	07/02/2008
Project Manager:	Kaiser
Project Manager Phone:	(217) 524-4650
Email:	Karl.Kaiser@illinois.gov
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	09/17/2008
45 Report Received:	09/17/2008
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/05/2008**
NFR Date Recorded:	09/16/2009

Z100 **WIERZ, EDWARD** **LUST** **S104527062**
NE **3101 SOUTH PULASKI RD.** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.366 mi.
1935 ft. **Site 2 of 2 in cluster Z**

Relative:
Lower

Actual:
593 ft.

LUST:

Incident Num:	901060
IL EPA Id:	0316300010
Product:	Gasoline
IEMA Date:	04/21/1990
Project Manager:	Dolan
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Edward Wierz
PRP Contact:	Not reported
PRP Address:	12524 East Saddlehorn Trail
PRP City,St,Zip:	Scottsdale, AZ 85259
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731

WIERZ, EDWARD (Continued) **S104527062**

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:	**07/17/2000**
NFR Date Recorded:	09/11/2000

AA101 **SOUTH END CARTAGE** **LUST** **S104967995**
South **4222 SOUTH KNOX** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.380 mi.
2005 ft. **Site 1 of 4 in cluster AA**

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	20010695
IL EPA Id:	0316585132
Product:	Deisel
IEMA Date:	04/22/2001
Project Manager:	Bloome
Project Manager Phone:	(217) 524-1288
Email:	Clayton.Bloome@illinois.gov
PRP Name:	South End Cartage
PRP Contact:	Not reported
PRP Address:	4222 South Knox
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7735852550
Site Classification:	High
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	05/25/2001
45 Report Received:	11/25/2002
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

AB102 **CHICAGO, CITY OF** **LUST** **S105225852**
East **3458 SOUTH LAWNDALE AVE.** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.384 mi.
2029 ft. **Site 1 of 2 in cluster AB**

Relative:
Lower

Actual:
593 ft.

LUST:

Incident Num:	990275
IL EPA Id:	0316305083
Product:	Gasoline
IEMA Date:	02/08/1999
Project Manager:	Urish
Project Manager Phone:	(217) 524-5596
Email:	Matt.Urish@illinois.gov
PRP Name:	City of Chicago, Dept. of Environment
PRP Contact:	Naren Prasad
PRP Address:	30 North La Salle St., Rm. 2500
PRP City,St,Zip:	Chicago, IL 60602
PRP Phone:	3127425711
Site Classification:	Not reported
Section 57.5(g) Letter:	732

CHICAGO, CITY OF (Continued) **S105225852**

Non LUST Determination Letter:	Not reported
20 Report Received:	03/15/1999
45 Report Received:	04/02/1999
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**09/01/2000**
NFR Date Recorded:	09/18/2000

AB103 **M.W. POWELL CO.** **LUST** **S104002301**
East **3445 LAWNDALE** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.387 mi.
2044 ft. **Site 2 of 2 in cluster AB**

Relative:
Lower

Actual:
592 ft.

LUST:

Incident Num:	920182
IL EPA Id:	0316305064
Product:	Gasoline
IEMA Date:	01/21/1992
Project Manager:	Putrich
Project Manager Phone:	(217) 524-4827
Email:	Steve.Putrich@illinois.gov
PRP Name:	M.W. Powell Co.
PRP Contact:	Joe Roque
PRP Address:	3445 South Lawndale
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	02/26/1992
45 Report Received:	Not reported
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**03/03/2010**
NFR Date Recorded:	Not reported

AA104 **WARREN OIL CO.** **LUST** **S104872244**
South **4243 SOUTH KNOX** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.396 mi.
2093 ft. **Site 2 of 4 in cluster AA**

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	20010153
IL EPA Id:	0316585198
Product:	Gasoline
IEMA Date:	01/28/2001
Project Manager:	Gaydosh
Project Manager Phone:	(217) 785-0231
Email:	Jay.Gaydosh@illinois.gov
PRP Name:	Warren Oil Co.
PRP Contact:	Tim Lagos
PRP Address:	4243 South Knox
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7738383591
Site Classification:	Not reported
Section 57.5(g) Letter:	734

WARREN OIL CO. (Continued) **S104872244**

Non LUST Determination Letter:	Not reported
20 Report Received:	05/21/2001
45 Report Received:	05/21/2001
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**01/22/2010**
NFR Date Recorded:	02/04/2010

AA105 **WARREN OIL CO.** **LUST** **S104872245**
South **4242 SOUTH KNOX** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.397 mi.
2094 ft. **Site 3 of 4 in cluster AA**

Relative:
Higher

Actual:
596 ft.

LUST:

Incident Num:	20010154
IL EPA Id:	0316585196
Product:	Deisel
IEMA Date:	01/28/2001
Project Manager:	Benanti
Project Manager Phone:	(217) 524-4649
Email:	Trent.Benanti@illinois.gov
PRP Name:	Warren Oil Co.
PRP Contact:	Tim Lagos
PRP Address:	4242 South Knox
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7738383591
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	05/21/2001
45 Report Received:	05/21/2001
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/23/2009**
NFR Date Recorded:	01/06/2010

AC106 **CHICAGO, CITY OF - GENERAL SERVICES** **LUST** **S110613441**
ENE **3400 SOUTH LAWNDALE** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.398 mi.
2099 ft. **Site 1 of 2 in cluster AC**

Relative:
Lower

Actual:
592 ft.

LUST:

Incident Num:	20100826
IL EPA Id:	0316306454
Product:	Other Petro
IEMA Date:	07/30/2010
Project Manager:	Not reported
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734

CHICAGO, CITY OF - GENERAL SERVICES (Continued) **S110613441**

Non LUST Determination Letter:	Not reported
20 Report Received:	12/14/2010
45 Report Received:	Not reported
Section 57.5(g) Letter:	01/04/2011
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

AC107 **F.A.B. TRANSIT** **LUST** **S104521575**
ENE **3401 SOUTH LAWNDALE** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.399 mi.
2109 ft. **Site 2 of 2 in cluster AC**

Relative:
Lower

Actual:
592 ft.

LUST:

Incident Num:	970535
IL EPA Id:	0316305123
Product:	Non Petro
IEMA Date:	03/28/1997
Project Manager:	Piggush
Project Manager Phone:	(217) 782-3101
Email:	Michael.Piggush@illinois.gov
PRP Name:	F.A.B. Transit
PRP Contact:	George Davis
PRP Address:	3401 South Lawndale
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	1997-12-23
20 Report Received:	04/14/1997
45 Report Received:	06/20/1997
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

AD108 **DEARBORNE WHOLESALE GROCERS** **LUST** **S104526422**
SSE **4040 WEST 40TH** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.400 mi.
2113 ft. **Site 1 of 2 in cluster AD**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	903512
IL EPA Id:	0316585047
Product:	Gasoline, Deisel
IEMA Date:	11/27/1990
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Dearborne Wholesale Grocers
PRP Contact:	Steve Edwards
PRP Address:	2801 Southwest Ave.
PRP City,St,Zip:	Chicago, IL 60608
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731

DEARBORNE WHOLESALE GROCERS (Continued) **S104526422**

Non LUST Determination Letter: Not reported
20 Report Received: 02/29/1992
45 Report Received: 02/29/1992
Section 57.5(g) Letter: Not reported
NFA/NFR Letter: 03/19/1991
NFR Date Recorded: Not reported

AA109 **A & B CONTAINER** **CERC-NFRAP** **1003870159**
South **4250 SO KNOX AVE** **ILD980704795**
1/4-1/2 **CHICAGO, IL 60632**
0.403 mi.
2130 ft. **Site 4 of 4 in cluster AA**

Relative: Higher

Actual: 596 ft.

CERC-NFRAP:
Site ID: 0500748
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 03/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 02/01/1984
Priority Level: Low priority for further assessment

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 03/12/1985
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 03/12/1985
Priority Level: Not reported

AE110 **DOMINICK'S FINER FOODS** **LUST** **S104527702**
SSE **4404 WEST 42ND ST.** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.421 mi.
2221 ft. **Site 1 of 2 in cluster AE**

Relative: Higher

Actual: 595 ft.

LUST:
Incident Num: 891399
IL EPA Id: 0316585030
Product: Gasoline, Deisel
IEMA Date: 08/02/1989
Project Manager: Harlow
Project Manager Phone: (217) 524-7650
Email: Robert.Harlow@illinois.gov
PRP Name: Dominick's Finer Foods
PRP Contact: Not reported

DOMINICK'S FINER FOODS (Continued) **S104527702**

PRP Address:	555 Northwest Ave.
PRP City,St,Zip:	Northlake, IL 60164
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	02/29/1992
45 Report Received:	02/29/1992
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/20/1993**
NFR Date Recorded:	Not reported

AE111
SSE
1/4-1/2
0.421 mi.
2221 ft.

Relative:
Higher

Actual:
595 ft.

DONNA'S DISTRIBUTION **SRP** **S104491706**
4404 WEST 42ND STREET **N/A**
CHICAGO, IL 60632

Site 2 of 2 in cluster AE

SRP:

IL EPA Id:	0316585030
US EPA Id:	Not reported
Longitude:	-87.73345
Latitude:	41.8175
Contact Name:	Thomas Roti
Contact Address:	333 North Northwest Avenue
Contact Address2:	Not reported
Contact City,St,Zip:	Northlake, IL 60164
Contact Phone:	(708) 562-1000
Date Enrolled:	07/26/1996
Point Of Contact:	Waye Sheu, P.E.
Consultant Company:	URS
Consultant Address:	1701 Golf Road
Consultant Address2:	Suite 1000
Consultant City,St,Zip:	Rolling Meadows, IL 60008
Consultant Phone:	(847) 228-0707
Proj Mgr Assigned:	L-Charles
Sec. 4 Letter Date:	Not reported
NFR Recorded:	9/14/1998
Active:	False
Total Acres:	22
No Further Remediation Letter Dt:	8/14/1998
Remediation Applicant Co:	Dominick's Finer Foods, Inc.
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Mr. Andrew Withrell
Remediation Applicant Company:	Dominick's Finer Foods
Remediation Applicant Address:	333 North Northwest Avenue
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Northlake, IL 60164-
Illinois EPA:	0316585030
Site Name:	Donna's Distribution
NFR Letter:	8/14/1998
NFR Letter Date Recorded:	9/14/1998
Site Type:	Residential
Comprehensive/Focused:	Comprehensive
Institutional Controls:	Not reported
Barrier:	Not reported
Worker Caution:	False
Acres:	22

AF112 **BEL-AIR DRIVE-IN THEATRE** **SRP** **S102448859**
NW **3100 CICERO AVENUE** **N/A**
1/4-1/2 **CICERO, IL**
0.423 mi.
2231 ft. **Site 1 of 3 in cluster AF**

Relative:
Higher

Actual:
606 ft.

SRP:

IL EPA Id:	0310510045
US EPA Id:	ILR000150383
Longitude:	-87.74129
Latitude:	41.83499
Contact Name:	Keith Fetzner
Contact Address:	945 Oaklawn Avenue
Contact Address2:	Not reported
Contact City,St,Zip:	Elmhurst, IL 601261012
Contact Phone:	(630) 993-9000
Date Enrolled:	09/12/1996
Point Of Contact:	Keith R. Fetzner
Consultant Company:	Mostardi-Platt Associates, Inc.
Consultant Address:	945 Oaklawn Avenue
Consultant Address2:	Not reported
Consultant City,St,Zip:	Elmhurst, IL 60126
Consultant Phone:	(630) 993-9000
Proj Mgr Assigned:	Seul
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	Not reported
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	Mostardi-Platt Associates, Inc.
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

AG113 **PAT'S J S AUTOMOTIVE** **SRP** **S108480264**
SW **4219 SOUTH CICERO AVENUE** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.426 mi.
2248 ft. **Site 1 of 2 in cluster AG**

Relative:
Lower

Actual:
590 ft.

SRP:

IL EPA Id:	0316560020
US EPA Id:	Not reported
Longitude:	-87.7426
Latitude:	41.81592
Contact Name:	Brian Hoffman

PAT'S J S AUTOMOTIVE (Continued) **S108480264**

Contact Address:	425 Huehl Road
Contact Address2:	Building 18
Contact City,St,Zip:	Northbrook, IL 60062-
Contact Phone:	(847) 272-5600
Date Enrolled:	04/04/2007
Point Of Contact:	Thomas D. Culig
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:	(773) 722-9200
Proj Mgr Assigned:	Rossi
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	2.5
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	RSD Landings, LLC
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

AF114 **BP PRODUCTS NORTH AMERICA #18878** **LUST** **S104523279**
NW **3100 SOUTH CICERO AVE** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.426 mi.
2250 ft. **Site 2 of 3 in cluster AF**

Relative:
Higher

Actual:
606 ft.

LUST:

Incident Num:	20031037
IL EPA Id:	0316295038
Product:	Unleaded Gas, Other Petro
IEMA Date:	07/15/2003
Project Manager:	Bloome
Project Manager Phone:	(217) 524-1288
Email:	Clayton.Bloome@illinois.gov
PRP Name:	Angel Associates Limited Partnership
PRP Contact:	Peter M. Spina
PRP Address:	381 E. St. Charles Road
PRP City,St,Zip:	Carol Stream, IL 60188
PRP Phone:	6305842505
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Non LUST Determination Letter:	Not reported

BP PRODUCTS NORTH AMERICA #18878 (Continued) **S104523279**

20 Report Received:	07/18/2003
45 Report Received:	08/29/2003
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

Incident Num:	940671
IL EPA Id:	0316295038
Product:	Gasoline
IEMA Date:	03/29/1994
Project Manager:	Bloome
Project Manager Phone:	(217) 524-1288
Email:	Clayton.Bloome@illinois.gov
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
Site Classification:	HIGH
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	04/01/1994
45 Report Received:	06/02/1994
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**04/04/2002**
NFR Date Recorded:	08/07/2002

AF115 **BP AMOCO 26996** **SSU** **S107926329**
NW **3100 S CICERO AVE-B** **HWAR** **N/A**
1/4-1/2 **CICERO, IL 60804**
0.426 mi.
2250 ft. **Site 3 of 3 in cluster AF**

Relative:
Higher

Actual:
606 ft.

SSU:

Facility ID:	0310510045
Facility Type:	Auto Fluff
Lat/Long:	0 / 0
Directions:	Not reported
Region:	Des Plaines
Current Program:	SSU
Project Manager:	Rivera
Community Relations:	Not reported
SSU Status:	Completed
US EPA Id:	Not reported
FOS:	Rivera
Year Completed:	Not reported
Year Entered:	2003
Site Size:	40

HWAR:

Location Telephone Number:	2198385138
Location Contact Name:	DAVID PORTER
Latitude Decimal Degrees (Assumed Nn.Nnnnnn):	41836660
Longitude In Decimal Degrees (Assumed Decimal):	087743750
Owner Or Alternate Company Name:	Not reported
Owner Or Alternate Street Address:	Not reported
Owner Or Alternate Post Office Box:	Not reported

BP AMOCO 26996 (Continued) **S107926329**

Owner Or Alternate City: Not reported
Owner Or Alternate State: Not reported
Owner Or Alternate Zip Code: Not reported
Owner Or Alternate Telephone Number: Not reported
Owner Or Alternate Contact Name: Not reported
Operator Or Alternate Company Name: Not reported
Operator Or Alternate Street Address: Not reported
Operator Or Alternate Post Office Box: Not reported
Operator Or Alternate City: Not reported
Operator Or Alternate State: Not reported
Operator Or Alternate Zip Code: Not reported
Operator Or Alternate Telephone Number: Not reported
Operator Or Alternate Contact Name: Not reported
Secondary Or Alternate Usepa Identification Number: Not reported
Standard Industrial Classification Code: Not reported
Primary NAIC System Code: Not reported
Secondary NAIC System Code: Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs): Not reported
Haz Waste Small Quantity Generator(or Smaller) Ind (as above): Not reported
Nonhazardous Waste Generator Ind (as above): Not reported
Compost Annual Reort Ind (as above): Not reported
Landfill Annual Report Ind (as above): Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above): Not reported
Haz Waste Permit Ind (S Indicates Activity): Not reported
Solid Waste Permit Ind (S Indicates Activity): Not reported
Used Tire Program Activity Ind (S Indicates Activity): Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity): Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity): Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity): Not reported
Lust Program Activity Ind (S Indicates Activity): Not reported
Lust Reimbursement Program Activity Ind (S Indicates Activity): Not reported
Site Remediation Program Activity Ind (S Indicates Activity): Not reported
FSRS Activity Ind (S Indicates Activity): Not reported
State Response Action Activity Ind (S Indicates Activity): Not reported
Name And Address Change Date: 11/19/07
Hazardous Annual Report Company Name: Not reported
Hazardous Annual Report Street Address: Not reported
Hazardous Annual Report Post Office Box: Not reported
Hazardous Annual Report City: Not reported
Hazardous Annual Report State: Not reported
Hazardous Annual Report Zip Code: Not reported
Hazardous Annual Report Telephone Number: Not reported
Hazardous Annual Report Contact First Name: Not reported
Hazardous Annual Report Contact Last Name: Not reported
Hazardous Annual Report Contact Person Title Code: Not reported
Hazardous Annual Report New Notifier Code: Not reported
FIPS Country Code: 001
FIPS State Code: 17
FIPS County Code: 031
FIPS City Or Township Code: 051
IEPA Region Identifier: 2
Original Entry Date: 02/10/05
Change Date: 02/07/11
Primary USEPA Identification Number: ILR000133355
Status: Not reported
Code: BP
Total Tanks: Not reported

AD116 **SUN CHEMICAL** **SRP** **1000226811**
SSE **4000 WEST 40TH STREET** **N/A**
1/4-1/2 **CHICAGO, IL**
0.427 mi.
2257 ft. **Site 2 of 2 in cluster AD**

Relative:
Higher

Actual:
595 ft.

SRP:

IL EPA Id:	0316005948
US EPA Id:	ILD020030201
Longitude:	-87.72446
Latitude:	41.81893
Contact Name:	Bruce Cohen
Contact Address:	Two North LaSalle Street
Contact Address2:	Not reported
Contact City,St,Zip:	Chicago, IL 60602
Contact Phone:	(312) 263-3131
Date Enrolled:	03/01/1994
Point Of Contact:	Curtis R. Michols
Consultant Company:	Roy F. Weston, Inc.
Consultant Address:	3 Hawthorn Parkway
Consultant Address2:	Suite 400
Consultant City,St,Zip:	Vernon Hills, IL 60061-1450
Consultant Phone:	(847) 918-4000
Proj Mgr Assigned:	Seul
Sec. 4 Letter Date:	8/4/1995
NFR Recorded:	Not reported
Active:	False
Total Acres:	4
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	Cohen Realty Services, Inc.
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

AH117 **MARIGUAS AUTO REPAIR** **LUST** **S105537799**
ENE **3314 SOUTH LAWNDALE ST.** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.428 mi.
2260 ft. **Site 1 of 4 in cluster AH**

Relative:
Higher

Actual:
594 ft.

LUST:

Incident Num:	20021012
IL EPA Id:	0316306375
Product:	Other Petro
IEMA Date:	07/16/2002
Project Manager:	McCain

MARIGUAS AUTO REPAIR (Continued) **S105537799**

Project Manager Phone:	(217) 785-6309
Email:	Robin.McCain@illinois.gov
PRP Name:	Mariguas Auto Repair
PRP Contact:	Dan Coyne
PRP Address:	3314 South Lawndale St.
PRP City,St,Zip:	Chicago, IL 60623
PRP Phone:	6304999124
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
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

AH118
ENE
1/4-1/2
0.430 mi.
2269 ft.

MRC POLYMERS, INC.
3307 SOUTH LAWNDALE AVENUE
CHICAGO, IL 60632

ENG CONTROLS **S106346414**
INST CONTROL **N/A**
SRP

Site 2 of 4 in cluster AH

Relative:
Higher

Actual:
594 ft.

ENGINEERING CONTROLS:

Illinois Epa Id:	0316575051
NFR Letter:	01/02/2007
Date NFR Recorded:	01/11/2007
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Daniel Ebberhart
RA Company:	MRC Polymers, Inc.
RA Address:	3307 South Lawndale Avenue
RA Secondary Address:	Not reported
RA City,St,Zip:	Chicago, IL 60632-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	4.5

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0316575051
NFR Letter:	01/02/2007
Date NFR Recorded:	01/11/2007
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Focused
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Daniel Ebberhart
RA Company:	MRC Polymers, Inc.
RA Address:	3307 South Lawndale Avenue
RA Secondary Address:	Not reported
RA City,St,Zip:	Chicago, IL 60632-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	4.5

MRC POLYMERS, INC. (Continued) **S106346414**

SRP:

IL EPA Id:	0316575051
US EPA Id:	ILR000122986
Longitude:	-87.7158
Latitude:	41.83228
Contact Name:	Daniel Ebberhart
Contact Address:	3307 South Lawndale Avenue
Contact Address2:	Not reported
Contact City,St,Zip:	Chicago, IL 60632-
Contact Phone:	(773) 890-5505
Date Enrolled:	04/19/2004
Point Of Contact:	Joseph C. Kelly
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:	Seul
Sec. 4 Letter Date:	Not reported
NFR Recorded:	1/11/2007
Active:	False
Total Acres:	4.5
No Further Remediation Letter Dt:	1/2/2007
Remediation Applicant Co:	MRC Polymers, Inc.
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	Mr. Daniel Ebberhart
Remediation Applicant Company:	MRC Polymers, Inc.
Remediation Applicant Address:	3307 South Lawndale Avenue
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Chicago, IL 60632-
Illinois EPA:	0316575051
Site Name:	MRC Polymers, Inc.
NFR Letter:	1/2/2007
NFR Letter Date Recorded:	1/11/2007
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Focused
Institutional Controls:	Groundwater use restriction
Barrier:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	4.5

AH119 **MRC POLYMERS** **LUST** **S106132057**
ENE **3307 SOUTH LAWNDALE** **N/A**
1/4-1/2 **CHICAGO, IL 60623**
0.433 mi.
2288 ft. **Site 3 of 4 in cluster AH**

Relative:
Higher

Actual:
594 ft.

LUST:

Incident Num:	20031887
IL EPA Id:	0316575051
Product:	Other Petro
IEMA Date:	12/30/2003
Project Manager:	Not reported
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported

MRC POLYMERS (Continued) **S106132057**

PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	P.A.
Non LUST Determination Letter:	Not reported
20 Report Received:	07/26/2006
45 Report Received:	07/26/2006
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**01/02/2007**
NFR Date Recorded:	01/11/2007

AH120
ENE
1/4-1/2
0.434 mi.
2292 ft.

JENALICA/P, INC.
3305 SOUTH LAWNDALE AVENUE
CHICAGO, IL 60623

ENG CONTROLS **S109366560**
INST CONTROL **N/A**
SRP

Site 4 of 4 in cluster AH

Relative:
Higher

Actual:
594 ft.

ENGINEERING CONTROLS:

Illinois Epa Id:	0316306431
NFR Letter:	06/22/2011
Date NFR Recorded:	Not reported
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Comprehensive
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	George Spear
RA Company:	Jenalica/P, Inc.
RA Address:	105 Fairbank Street
RA Secondary Address:	Not reported
RA City,St,Zip:	Adison, IL 60101-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	15

IL INSTUTIONAL CONTROL:

Illinois EPA Id:	0316306431
NFR Letter:	06/22/2011
Date NFR Recorded:	Not reported
Type Of Site:	Industrial/Commercial
Comprehensive / Focused:	Comprehensive
Remediation Applicant Title:	Mr.
Remediation Applicant Name:	George Spear
RA Company:	Jenalica/P, Inc.
RA Address:	105 Fairbank Street
RA Secondary Address:	Not reported
RA City,St,Zip:	Adison, IL 60101-
Institutional Controls:	Groundwater use restriction
Engineered Barriers:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	15

SRP:

IL EPA Id:	0316306431
US EPA Id:	Not reported
Longitude:	-87.71312

JENALICA/P, INC. (Continued) **S109366560**

Latitude:	41.83178
Contact Name:	George Spear
Contact Address:	105 Fairbank Street
Contact Address2:	Not reported
Contact City,St,Zip:	Addison, IL 60101-
Contact Phone:	(630) 628-7389
Date Enrolled:	11/13/2008
Point Of Contact:	Mark Z. Waxali, P.E.
Consultant Company:	Crescent Engineering Consultants, PC
Consultant Address:	748 Buckingham Court
Consultant Address2:	Not reported
Consultant City,St,Zip:	Carol Stream, IL 60188-
Consultant Phone:	(630) 204-9598
Proj Mgr Assigned:	Mergen
Sec. 4 Letter Date:	Not reported
NFR Recorded:	Not reported
Active:	False
Total Acres:	15
No Further Remediation Letter Dt:	6/22/2011
Remediation Applicant Co:	Jenalica/P, Inc.
Remediation Applicant Title:	President
Remediation Applicant Name:	Mr. George Spear
Remediation Applicant Company:	Jenalica/P, Inc.
Remediation Applicant Address:	105 Fairbank Street
Remediation Applicant Address 2:	Not reported
Remediation Applicant City,St,Zip:	Adison, IL 60101-
Illinois EPA:	0316306431
Site Name:	Jenalica/P, Inc.
NFR Letter:	6/22/2011
NFR Letter Date Recorded:	Not reported
Site Type:	Industrial/Commercial
Comprehensive/Focused:	Comprehensive
Institutional Controls:	Groundwater use restriction
Barrier:	Asphalt barrier/Concrete barrier
Worker Caution:	True
Acres:	15

AI121 **WESTERN SCREW MACHINE PROD. CORP.** **LUST** **S104525280**
South **4301 SOUTH KNOX AVE.** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.450 mi.
2376 ft. **Site 1 of 3 in cluster AI**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	920034
IL EPA Id:	0316315086
Product:	Fuel Oil
IEMA Date:	01/06/1992
Project Manager:	Harris
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Western Screw Machine Prod. Corp.
PRP Contact:	Anthony M. Mikas
PRP Address:	5649 South Tripp
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	Not reported
Site Classification:	Not reported

WESTERN SCREW MACHINE PROD. CORP. (Continued) **S104525280**

Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	02/13/1992
45 Report Received:	04/09/1992
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**03/03/1994**
NFR Date Recorded:	Not reported

AG122 **AMOCO SS #15523** **LUST** **U001141948**
SSW **4247 SOUTH CICERO** **UST** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.450 mi.
2378 ft. **Site 2 of 2 in cluster AG**

Relative:
Lower

Actual:
590 ft.

LUST:

Incident Num:	20060497
IL EPA Id:	0316635015
Product:	Unleaded Gas
IEMA Date:	04/25/2006
Project Manager:	Rahman (Putrich)
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	05/11/2006
45 Report Received:	06/12/2006
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**Not reported**
NFR Date Recorded:	Not reported

UST:

Facility ID:	2010819
Facility Status:	CLOSED
Facility Type:	**SELF-SERVICE STATION**
Owner Name:	BP Products North America, Inc.
Owner Id:	U0000552
Owner Address:	P. O. Box 6038 Environmental Compliance Department
Owner City,St,Zip:	Artesia, CA 90702
Tank Number:	1
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	2/8/2006
OSFM First Notify Date:	4/25/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1979
Green Tag Decal:	**G001470**
Green Tag Issue Date:	**6/9/2005**
Green Tag Expire Date:	**12/31/2008**
Self Service Permit Inspection Date:	**Not reported**

AMOCO SS #15523 (Continued) **U001141948**

Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	3
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	2/8/2006
OSFM First Notify Date:	4/25/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1979
Green Tag Decal:	**G001470**
Green Tag Issue Date:	**6/9/2005**
Green Tag Expire Date:	**12/31/2008**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

Tank Number:	7
Tank Capacity:	10000
Tank Substance:	Gasoline
Last Used Date:	2/8/2006
OSFM First Notify Date:	4/25/1986
Tank Status:	**Removed**
Red Tag Issue Date:	Not reported
Install Date:	1/1/1979
Green Tag Decal:	**G001470**
Green Tag Issue Date:	**6/9/2005**
Green Tag Expire Date:	**12/31/2008**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	No

AJ123 **FISH FURNITURE** **LUST** **S104524599**
SSE **4242 WEST 42ND PL.** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.481 mi.
2541 ft. **Site 1 of 3 in cluster AJ**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	922392
IL EPA Id:	0316325140
Product:	Gasoline
IEMA Date:	08/28/1992
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Fish Furniture
PRP Contact:	John Fraus
PRP Address:	4242 West 42nd Pl.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	731
Non LUST Determination Letter:	Not reported
20 Report Received:	02/29/1992

FISH FURNITURE (Continued) **S104524599**

45 Report Received: 11/16/1992
Section 57.5(g) Letter: Not reported
NFA/NFR Letter: 12/01/1992
NFR Date Recorded: Not reported

124
SSE
1/4-1/2
0.482 mi.
2546 ft.

FLINT INK CORP
4101 S PULASKI RD
CHICAGO, IL 60632

CERC-NFRAP **1000173833**
RCRA-NonGen **ILD077006443**
FINDS
HWAR
AIRS

Relative:
Higher

Actual:
595 ft.

CERC-NFRAP:
Site ID: 0500464
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: SINCLAIR & VALENTINE CO INC
Alias Address: 4101 S PULASKI RD
CHICAGO, IL 60632

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 priority for further assessment

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 09/06/1985
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: HAZARD RANKING SYSTEM PACKAGE
Date Started: Not reported
Date Completed: 03/03/1986
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 12/11/1995
Priority Level: Not reported

RCRA-NonGen:
Date form received by agency: 03/01/1996
Facility name: FLINT INK CORP
Facility address: 4101 S PULASKI RD
CHICAGO, IL 60632
EPA ID: ILD077006443
Mailing address: 33105 SCHOOLCRAFT RD
LIVONA, MI 48150

FLINT INK CORP (Continued) **1000173833**

Contact:	STEVEN BARKER
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	(313) 458-7500
Contact email:	Not reported
EPA Region:	05
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/01/1994
Facility name:	FLINT INK CORP
Classification:	Large Quantity Generator
Date form received by agency:	03/01/1992
Facility name:	FLINT INK CORP
Classification:	Large Quantity Generator
Date form received by agency:	03/08/1990
Facility name:	FLINT INK CORP
Site name:	SINCLAIR & VALENTINE LP
Classification:	Large Quantity Generator
Date form received by agency:	11/19/1980
Facility name:	FLINT INK CORP
Classification:	Not a generator, verified
Date form received by agency:	08/18/1980
Facility name:	FLINT INK CORP
Classification:	Not a generator, verified

Facility Has Received Notices of Violations:

Regulation violated:	Not reported
Area of violation:	Generators - General
Date violation determined:	11/14/1989
Date achieved compliance:	03/19/1990
Violation lead agency:	State

FLINT INK CORP (Continued) **1000173833**

Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 11/14/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/19/1990
Evaluation lead agency: State

FINDS:

Registry ID: 110000899485

Environmental Interest/Information System

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.

ACES (Illinois - Agency Compliance And Enforcement System) is the Illinois EPA Project to facilitate the permitting operations

US EPA 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.

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.

HWAR:
Location Telephone Number: 3135386800
Location Contact Name: STEVEN BARKER
Latitude Decimal Degrees (Assumed Nn.Nnnnnn): 41817880
Longitude In Decimal Degrees (Assumed Decimal): 087723470
Owner Or Alternate Company Name: FLINT INK CORP
Owner Or Alternate Street Address: 25111 GLENDALE AVE
Owner Or Alternate Post Office Box: Not reported

FLINT INK CORP (Continued) **1000173833**

Owner Or Alternate City:	DETROIT
Owner Or Alternate State:	MI
Owner Or Alternate Zip Code:	482392689
Owner Or Alternate Telephone Number:	7738473700
Owner Or Alternate Contact Name:	Not reported
Operator Or Alternate Company Name:	FLINT INK CORP
Operator Or Alternate Street Address:	4101 S PULASKI RD
Operator Or Alternate Post Office Box:	Not reported
Operator Or Alternate City:	CHICAGO
Operator Or Alternate State:	IL
Operator Or Alternate Zip Code:	60632
Operator Or Alternate Telephone Number:	7738473700
Operator Or Alternate Contact Name:	Not reported
Secondary Or Alternate Usepa Identification Number:	Not reported
Standard Industrial Classification Code:	2893
Primary NAIC System Code:	32591
Secondary NAIC System Code:	Not reported
Haz Waste Large Quantity Generator Ind (H/Historic, 0-9 Year Latest Report, E Last Report > 10 Yrs):	E
Haz Waste Small Quantity Generator(or Smaller) Ind (as above):	Not reported
Nonhazardous Waste Generator Ind (as above):	Not reported
Compost Annual Reort Ind (as above):	Not reported
Landfill Annual Report Ind (as above):	Not reported
Potentially Infectious Medical Waste Annual Report Ind (as above):	Not reported
Haz Waste Permit Ind (S Indicates Activity):	Not reported
Solid Waste Permit Ind (S Indicates Activity):	Not reported
Used Tire Program Activity Ind (S Indicates Activity):	Not reported
Compliance Order Tracking Activity Ind (S Indicates Activity):	Not reported
Facility Compliance Tracking System Activity Ind (S Indicates Activity):	Not reported
Ind Of Groundwater Data In Mainframe Groundwater System (S Indicates Activity):	Not reported
Lust Program Activity Ind (S Indicates Activity):	Not reported
Lust Reimbursement Program Activity Ind (S Indicates Activity):	Not reported
Site Remediation Program Activity Ind (S Indicates Activity):	Not reported
FSRS Activity Ind (S Indicates Activity):	Not reported
State Response Action Activity Ind (S Indicates Activity):	Not reported
Name And Address Change Date:	01/26/05
Hazardous Annual Report Company Name:	FLINT INK CORP
Hazardous Annual Report Street Address:	33105 SCHOOLCRAFT RD
Hazardous Annual Report Post Office Box:	Not reported
Hazardous Annual Report City:	LIVONIA
Hazardous Annual Report State:	MI
Hazardous Annual Report Zip Code:	48150
Hazardous Annual Report Telephone Number:	3134587500
Hazardous Annual Report Contact First Name:	FRANK
Hazardous Annual Report Contact Last Name:	STANCZAK
Hazardous Annual Report Contact Person Title Code:	D
Hazardous Annual Report New Notifier Code:	Not reported
FIPS Country Code:	001
FIPS State Code:	17
FIPS County Code:	031
FIPS City Or Township Code:	600
IEPA Region Identifier:	2
Original Entry Date:	06/04/84
Change Date:	02/07/11
Primary USEPA Identification Number:	ILD077006443
Status:	Not reported
Code:	BP
Total Tanks:	Not reported

FLINT INK CORP (Continued) **1000173833**

IL AIRS:

Facility ID:	2960
ID Number:	031600CKZ
Year:	Not reported
Contact Name:	Not reported
Contact Title:	Not reported
Contact Tele:	Not reported
Contact Extention:	Not reported
Contact EMail:	Not reported
Contact Fax:	Not reported
Cease Operation Date:	3/5/1993
SIC Code:	2893
Address Type Code:	LOC

AI125 **QUALITY SAW & SEAL** **LUST** **S104529264**
South **4333 SOUTH KNOX AVE.** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.489 mi.
2580 ft. **Site 2 of 3 in cluster AI**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	982973
IL EPA Id:	0316585168
Product:	Deisel
IEMA Date:	12/02/1998
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	Lisa Curack
PRP Contact:	Not reported
PRP Address:	3550 North Lake Shore Dr.
PRP City,St,Zip:	Chicago, IL 60657
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	08/31/2000
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/19/2000**
NFR Date Recorded:	02/05/2001

AI126 **DURACK, LISA** **LUST** **S104529717**
South **4333 SOUTH KNOX** **N/A**
1/4-1/2 **CHICAGO, IL 60632**
0.489 mi.
2580 ft. **Site 3 of 3 in cluster AI**

Relative:
Higher

Actual:
595 ft.

LUST:

Incident Num:	991178
IL EPA Id:	0316585168
Product:	Deisel
IEMA Date:	05/17/1999
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported

DURACK, LISA (Continued) **S104529717**

PRP Name:	Lisa Durack
PRP Contact:	Not reported
PRP Address:	3550 North Lake Shore Dr. #917
PRP City,St,Zip:	Chicago, IL 60657
PRP Phone:	7733484721
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	06/04/1999
45 Report Received:	08/31/2000
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**12/19/2000**
NFR Date Recorded:	02/05/2001

AJ127 **4220 S KILDARE LLC** **RCRA-CESQG** **1001213834**
SSE **4220 S KILDARE BLVD** **FINDS** **ILR000046664**
1/4-1/2 **CHICAGO, IL 60632** **LUST**
0.490 mi.
2588 ft. **Site 2 of 3 in cluster AJ**

Relative:
Higher

Actual:
595 ft.

RCRA-CESQG:

Date form received by agency:	04/03/2008
Facility name:	4220 S KILDARE LLC
Facility address:	4220 S KILDARE BLVD CHICAGO, IL 60632
EPA ID:	ILR000046664
Mailing address:	2340 RIVER RD STE 310 DES PLAINES, IL 60018
Contact:	PETE JOYCE
Contact address:	4220 S KILDARE BLVD CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(773) 853-6688
Contact email:	Not reported
EPA Region:	05
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	SECURITY CAPITAL INDUSTRIAL TRUST
Owner/operator address:	14100 E 35TH PL STE 100 AURORA, CO 80011
Owner/operator country:	Not reported
Owner/operator telephone:	(303) 375-9292

4220 S KILDARE LLC (Continued) **1001213834**

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 07/11/2006
Facility name: 4220 S KILDARE LLC
Site name: ATLAS COLD STORAGE
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 11/08/2005
Facility name: 4220 S KILDARE LLC
Site name: ATLAS COLD STORAGE
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 01/05/1998
Facility name: 4220 S KILDARE LLC
Site name: CS INTEGRATED LLC
Classification: Not a generator, verified

Hazardous Waste Summary:
Waste code: K046
Waste name: WASTEWATER TREATMENT SLUDGES FROM THE MANUFACTURING, FORMULATION AND LOADING OF LEAD-BASED INITIATING COMPOUNDS.

Waste code: K175
Waste name: WASTEWATER TREATMENT SLUDGE FROM THE PRODUCTION OF VINYL CHLORIDE MONOMER..

Waste code: X003
Waste name: OTHER STATE REGULATED WASTES [i.e., DIESEL FUEL, GASOLINE AND HOME HEATING OIL]

Violation Status: No violations found

FINDS:

Registry ID: 110000537429

4220 S KILDARE LLC (Continued) **1001213834**

Environmental Interest/Information System

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.

US EPA Risk Management Plan (RMP) database stores the risk management plans reported by companies that handle, manufacture, use, or store certain flammable or toxic substances, as required under section 112(r) of the Clean Air Act (CAA).

LUST:

Incident Num:	980973
IL EPA Id:	0316585151
Product:	Other Petro
IEMA Date:	04/28/1998
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	CS Integrated
PRP Contact:	Chuck Balija
PRP Address:	4220 South Kildare Blvd.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7735234850
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	06/10/1998
45 Report Received:	07/30/1998
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/30/1998**
NFR Date Recorded:	02/16/1999

Incident Num:	981049
IL EPA Id:	0316585151
Product:	Other Petro
IEMA Date:	05/05/1998
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	CS Integrated
PRP Contact:	Chuck Balija
PRP Address:	4220 South Kildare Blvd.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7735234850
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	06/10/1998
45 Report Received:	07/30/1998
Section 57.5(g) Letter:	Not reported

4220 S KILDARE LLC (Continued) **1001213834**

NFA/NFR Letter:	**11/30/1998**
NFR Date Recorded:	02/16/1999
Incident Num:	981165
IL EPA Id:	0316585151
Product:	Other Petro
IEMA Date:	05/18/1998
Project Manager:	Hamilton
Project Manager Phone:	(217) 782-6762
Email:	Not reported
PRP Name:	CS Integrated
PRP Contact:	Chuck Balija
PRP Address:	4220 South Kildare Blvd.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	7735234850
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	06/10/1998
45 Report Received:	07/29/1998
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/30/1998**
NFR Date Recorded:	02/16/1999

AJ128 **MIDAS INTERNATIONAL** **RCRA-SQG** **1000157254**
SSE **4235 W 42ND PL** **FINDS** **ILD021291687**
1/4-1/2 **CHICAGO, IL 60632** **LUST**
0.491 mi.
2594 ft. **Site 3 of 3 in cluster AJ**

Relative:
Higher

Actual:
595 ft.

RCRA-SQG:

Date form received by agency:	04/21/1989
Facility name:	MIDAS INTERNATIONAL
Facility address:	4235 W 42ND PL CHICAGO, IL 60632
EPA ID:	ILD021291687
Contact:	JEFF KEVORKIAN
Contact address:	4235 W 42ND PL CHICAGO, IL 60632
Contact country:	US
Contact telephone:	(312) 650-5310
Contact email:	Not reported
EPA Region:	05
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NAME NOT REPORTED
Owner/operator address:	ADDRESS NOT REPORTED CITY NOT REPORTED, AK 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 555-1212
Legal status:	Private

MIDAS INTERNATIONAL (Continued) **1000157254**

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: MIDAS INTERNATIONAL
Owner/operator address: ADDRESS NOT REPORTED
CITY NOT REPORTED, AK 99998
Owner/operator country: Not reported
Owner/operator telephone: (312) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D000
Waste name: Not Defined

Waste code: D001
Waste name: 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.

Violation Status: No violations found

FINDS:

Registry ID: 110005820941

Environmental Interest/Information System
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,

MIDAS INTERNATIONAL (Continued) **1000157254**

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:	910766
IL EPA Id:	0316575020
Product:	Fuel Oil, Non Petro
IEMA Date:	03/22/1991
Project Manager:	NOT ASSIGNED
Project Manager Phone:	Not reported
Email:	Not reported
PRP Name:	Midas International
PRP Contact:	Dale Montgomery
PRP Address:	4235 West 42nd Pl.
PRP City,St,Zip:	Chicago, IL 60632
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	732
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	02/16/1993
Section 57.5(g) Letter:	04/21/1994
NFA/NFR Letter:	**07/31/1995**
NFR Date Recorded:	Not reported

129
NW
1/4-1/2
0.498 mi.
2631 ft.

PLAZA INN CICERO **LUST** **U004123070**
3026 SOUTH CICERO AVENUE **UST** **N/A**
CICERO, IL 60804

Relative:
Higher

Actual:
607 ft.

LUST:

Incident Num:	20081156
IL EPA Id:	0310515439
Product:	Gasoline
IEMA Date:	07/31/2008
Project Manager:	Putrich
Project Manager Phone:	(217) 524-4827
Email:	Steve.Putrich@illinois.gov
PRP Name:	Not reported
PRP Contact:	Not reported
PRP Address:	Not reported
PRP City,St,Zip:	Not reported
PRP Phone:	Not reported
Site Classification:	Not reported
Section 57.5(g) Letter:	734
Non LUST Determination Letter:	Not reported
20 Report Received:	Not reported
45 Report Received:	09/29/2008
Section 57.5(g) Letter:	Not reported
NFA/NFR Letter:	**11/18/2008**
NFR Date Recorded:	12/02/2008

UST:

Facility ID:	2044085

PLAZA INN CICERO (Continued) **U004123070**

Facility Status:	EXEMPT
Facility Type:	**COMMERCIAL / RETAIL**
Owner Name:	Plaza Inn Cicero, LLC c/o David G. Pyles
Owner Id:	U0034832
Owner Address:	3730 W. Devon Ave.
Owner City,St,Zip:	Lincolnwood, IL 60712

Tank Number:	1
Tank Capacity:	8000
Tank Substance:	Gasoline
Last Used Date:	12/31/1973
OSFM First Notify Date:	6/30/2008
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

Tank Number:	2
Tank Capacity:	8000
Tank Substance:	Gasoline
Last Used Date:	12/31/1973
OSFM First Notify Date:	8/15/2008
Tank Status:	**Exempt from registration**
Red Tag Issue Date:	Not reported
Install Date:	Not reported
Green Tag Decal:	**Not reported**
Green Tag Issue Date:	**Not reported**
Green Tag Expire Date:	**Not reported**
Self Service Permit Inspection Date:	**Not reported**
Self Service Permit Expire Date:	**Not reported**
Fee Due:	Not reported

130
SSE
1/2-1
0.583 mi.
3076 ft.

ROCK TENN CO
4200 S PULASKI RD
CHICAGO, IL 60632

CORRACTS **1000191361**
RCRA-NonGen **ILD006195853**
FINDS

Relative:
Higher

Actual:
595 ft.

CORRACTS:

EPA ID:	ILD006195853
EPA Region:	05
Area Name:	ENTIRE FACILITY
Actual Date:	04/02/1998
Action:	CA050 - RFA Completed
NAICS Code(s):	Not reported
Original schedule date:	Not reported
Schedule end date:	Not reported

EPA ID:	ILD006195853
EPA Region:	05

ROCK TENN CO (Continued) **1000191361**

Area Name: ENTIRE FACILITY
Actual Date: 04/02/1998
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: ILD006195853
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 04/02/1998
Action: CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-NonGen:
Date form received by agency: 10/17/2000
Facility name: ROCK TENN CO
Facility address: 4200 S PULASKI RD
CHICAGO, IL 60632
EPA ID: ILD006195853
Mailing address: 4200 S PULASKI ROAD
CHICAGO, IL 60632
Contact: DAVID LUEPKE
Contact address: 4200 S PULASKI ROAD
CHICAGO, IL 60632
Contact country: US
Contact telephone: (773) 847-2500
Contact email: Not reported
EPA Region: 05
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: WALDORF CORPORATION
Owner/operator address: PO BOX 4098
NORCROSS, GA 30091
Owner/operator country: Not reported
Owner/operator telephone: (770) 448-2193
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No

ROCK TENN CO (Continued) **1000191361**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/01/2000
Facility name: ROCK TENN CO
Site name: ROCK-TENN CO
Classification: Large Quantity Generator

Date form received by agency: 12/04/1998
Facility name: ROCK TENN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/1998
Facility name: ROCK TENN CO
Site name: ROCK-TENN CO
Classification: Large Quantity Generator

Date form received by agency: 03/01/1996
Facility name: ROCK TENN CO
Site name: WALDORF CORP
Classification: Large Quantity Generator

Date form received by agency: 03/01/1994
Facility name: ROCK TENN CO
Site name: WALDORF CORP
Classification: Large Quantity Generator

Date form received by agency: 11/04/1993
Facility name: ROCK TENN CO
Classification: Not a generator, verified

Date form received by agency: 03/01/1992
Facility name: ROCK TENN CO
Site name: WALDORF CORP
Classification: Large Quantity Generator

Date form received by agency: 02/14/1990
Facility name: ROCK TENN CO
Site name: WALDORF CORP
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D000
Waste name: Not Defined

Waste code: D001
Waste name: 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,

ROCK TENN CO (Continued) **1000191361**

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.

Waste code: D002
Waste name: 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.

Waste code: D018
Waste name: BENZENE

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: 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.

Waste code: F005
Waste name: 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.

Waste code: K086
Waste name: SOLVENT WASHES AND SLUDGES, CAUSTIC WASHES AND SLUDGES, OR WATER WASHES AND SLUDGES FROM CLEANING TUBS AND EQUIPMENT USED IN THE FORMULATION OF INK FROM PIGMENTS, DRIERS, SOAPS, AND STABILIZERS CONTAINING CHROMIUM AND LEAD.

ROCK TENN CO (Continued) **1000191361**

Corrective Action Summary:

Event date:	04/02/1998
Event:	RFA Completed
Event date:	04/02/1998
Event:	CA Prioritization, Facility or area was assigned a low corrective action priority.
Event date:	04/02/1998
Event:	RFA Determination Of Need For An RFI, RFI is Necessary;

Facility Has Received Notices of Violations:

Regulation violated:	SR - 722.134(c)
Area of violation:	Generators - Pre-transport
Date violation determined:	06/13/1991
Date achieved compliance:	01/14/1992
Violation lead agency:	State
Enforcement action:	VIOLATION NOTICE (VN)
Enforcement action date:	08/27/1991
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	SR - 725.116(a)
Area of violation:	TSD - General Facility Standards
Date violation determined:	06/13/1991
Date achieved compliance:	01/14/1992
Violation lead agency:	State
Enforcement action:	VIOLATION NOTICE (VN)
Enforcement action date:	08/27/1991
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	SR - 703.151(a)
Area of violation:	TSD - General
Date violation determined:	06/13/1991
Date achieved compliance:	04/23/1993
Violation lead agency:	State
Enforcement action:	VIOLATION NOTICE (VN)
Enforcement action date:	08/27/1991
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	SR - 725.242(a)
Area of violation:	TSD - Financial Requirements

ROCK TENN CO (Continued) **1000191361**

Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.353(b)
Area of violation: TSD - Waste Pile Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.113(a)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 04/23/1993
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.114(a)/(b)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.114(c)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991

ROCK TENN CO (Continued) **1000191361**

Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.354
Area of violation: TSD - Waste Pile Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.115(a)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.212(a)
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.353(a)
Area of violation: TSD - Waste Pile Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992

ROCK TENN CO (Continued) **1000191361**

Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.113(b)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 04/23/1993
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.131
Area of violation: TSD - Preparedness and Prevention
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.116(d)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.173
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 04/23/1993
Violation lead agency: State

ROCK TENN CO (Continued) **1000191361**

Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.115(b)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 04/23/1993
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.115(c)
Area of violation: TSD - General Facility Standards
Date violation determined: 06/13/1991
Date achieved compliance: 01/14/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 08/27/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 11/25/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/19/1995
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/19/1995
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/19/1993

ROCK TENN CO (Continued) **1000191361**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/19/1993
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 01/14/1992
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 01/14/1992
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 01/14/1992
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 04/23/1993
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 04/23/1993
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/14/1992
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Preparedness and Prevention
Date achieved compliance: 01/14/1992
Evaluation lead agency: State

Evaluation date: 06/13/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Waste Pile Standards
Date achieved compliance: 01/14/1992

ROCK TENN CO (Continued) **1000191361**

Evaluation lead agency: State

FINDS:

Registry ID: 110000435164

Environmental Interest/Information System

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.

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).

US EPA 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.

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.

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131 West 1/2-1 0.757 mi. 3999 ft. | **KOPPERS INC** | **CERC-NFRAP** | **1000346561**
3900 S LARAMIE AVE | **CORRACTS** | **60650KPPRS39**
CHICAGO, IL 60650 | **RCRA-LQG**
TRIS
FINDS

Relative: Lower

Actual: 592 ft.

CERC-NFRAP:

Site ID:	0500170
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Assessment History:

Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	04/01/1979
Priority Level:	Not reported
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	01/01/1983
Priority Level:	Low priority for further assessment
Action:	ARCHIVE SITE
Date Started:	Not reported

KOPPERS INC (Continued) **1000346561**

Date Completed: 12/01/1983
Priority Level: Not reported

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 12/01/1983
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: HAZARD RANKING SYSTEM PACKAGE
Date Started: Not reported
Date Completed: 12/01/1983
Priority Level: Not reported

Action: REMOVAL ASSESSMENT
Date Started: 02/15/1993
Date Completed: 02/15/1993
Priority Level: Not reported

CORRACTS:

EPA ID: ILD005164611
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 04/22/1983
Action: CA050 - RFA Completed
NAICS Code(s): 325192
Cyclic Crude and Intermediate Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: ILD005164611
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 04/22/1991
Action: CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s): 325192
Cyclic Crude and Intermediate Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: ILD005164611
EPA Region: 05
Area Name: ENTIRE FACILITY
Actual Date: 05/01/2009
Action: CA070NO - RFA Determination Of Need For An RFI, RFI is Not Necessary
NAICS Code(s): 325192
Cyclic Crude and Intermediate Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: ILD005164611
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

KOPPERS INC (Continued) **1000346561**

NAICS Code(s): 325192
Cyclic Crude and Intermediate Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-LQG:
Date form received by agency: 03/01/2010
Facility name: KOPPERS INC
Facility address: 3900 S LARAMIE AVE
CICERO, IL 608044595
EPA ID: ILD005164611
Contact: STEPHANIE FLYNN
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (708) 656-5900
Contact email: Not reported
EPA Region: 05
Land type: Private
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: KOPPERS INC
Owner/operator address: 3900 S LARAMIE AVE
CICERO, IL 60804
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 12/28/1988
Owner/Op end date: Not reported

Owner/operator name: KOPPERS CO INC
Owner/operator address: 3900 S LARAMIE AVE
CHICAGO, IL 60650
Owner/operator country: Not reported
Owner/operator telephone: (312) 656-5900
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KOPPERS INC
Owner/operator address: 2900 S LARAMIE AVE

KOPPERS INC (Continued) **1000346561**

	CICERO, IL 60804
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	12/28/1988
Owner/Op end date:	Not reported

Owner/operator name:	KOPPERS CO INC
Owner/operator address:	3900 S LARAMIE AVE
	CITY NOT REPORTED, IL 99998
Owner/operator country:	Not reported
Owner/operator telephone:	(312) 656-5900
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/01/2008
Facility name:	KOPPERS INC
Classification:	Large Quantity Generator

Date form received by agency:	03/01/2006
Facility name:	KOPPERS INC
Classification:	Large Quantity Generator

Date form received by agency:	03/01/2004
Facility name:	KOPPERS INC
Classification:	Large Quantity Generator

Date form received by agency:	03/01/2002
Facility name:	KOPPERS INC
Site name:	KOPPERS INDUSTRIES INC
Classification:	Large Quantity Generator

Date form received by agency:	03/01/2000
Facility name:	KOPPERS INC
Site name:	KOPPERS INDUSTRIES INC

KOPPERS INC (Continued) **1000346561**

Classification: Large Quantity Generator

Date form received by agency: 03/01/1998
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1996
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1994
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 03/11/1992
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 03/11/1992
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 03/01/1992
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 02/26/1990
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 11/19/1980
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Not a generator, verified

Date form received by agency: 08/18/1980
Facility name: KOPPERS INC
Site name: KOPPERS INDUSTRIES INC
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: U165
Waste name: NAPHTHALENE

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS

KOPPERS INC (Continued) **1000346561**

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.

Waste code: D018
Waste name: BENZENE

Waste code: D026
Waste name: CRESOL

Waste code: K023
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE

Waste code: K024
Waste name: DISTILLATION BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE

Waste code: K093
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE

Waste code: K094
Waste name: DISTILLATION BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE

Waste code: K147
Waste name: Not Defined

Waste code: U051
Waste name: CREOSOTE

Waste code: U165
Waste name: NAPHTHALENE

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE

Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

KOPPERS INC (Continued) **1000346561**

Waste code: K023
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE

Waste code: K024
Waste name: DISTILLATION BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE

Waste code: K035
Waste name: WASTEWATER TREATMENT SLUDGES GENERATED IN THE PRODUCTION OF CREOSOTE

Waste code: K093
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE

Waste code: U051
Waste name: CREOSOTE

Waste code: U147
Waste name: 2,5-FURANDIONE

Waste code: U165
Waste name: NAPHTHALENE

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE

Waste code: U239
Waste name: BENZENE, DIMETHYL- (I,T)

Waste code: D001
Waste name: 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.

Waste code: D002
Waste name: 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.

Waste code: K035
Waste name: WASTEWATER TREATMENT SLUDGES GENERATED IN THE PRODUCTION OF CREOSOTE

Waste code: K093
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE

Waste code: U051
Waste name: CREOSOTE

KOPPERS INC (Continued) **1000346561**

Waste code: U147
Waste name: 2,5-FURANDIONE

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:

Waste code: D001
Waste name: 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.
Amount (Lbs): 557

Waste code: D018
Waste name: BENZENE
Amount (Lbs): 87932

Waste code: D026
Waste name: CRESOL
Amount (Lbs): 46374

Waste code: K023
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE
Amount (Lbs): 16841

Waste code: K024
Waste name: DISTILLATION BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM NAPHTHALENE
Amount (Lbs): 1271424

Waste code: K093
Waste name: DISTILLATION LIGHT ENDS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE
Amount (Lbs): 16841

Waste code: K094
Waste name: DISTILLATION BOTTOMS FROM THE PRODUCTION OF PHTHALIC ANHYDRIDE FROM ORTHO-XYLENE
Amount (Lbs): 1271424

Waste code: K147
Waste name: Not Defined
Amount (Lbs): 16786

Waste code: U051
Waste name: CREOSOTE
Amount (Lbs): 3754

Waste code: U165
Waste name: NAPHTHALENE
Amount (Lbs): 23736

KOPPERS INC (Continued) **1000346561**

Waste code: U190
Waste name: 1,3-ISOBENZOFURANDIONE
Amount (Lbs): 119770

Corrective Action Summary:
Event date: 04/22/1983
Event: RFA Completed

Event date: 04/22/1991
Event: RFA Determination Of Need For An RFI, RFI is Necessary;

Event date: 09/27/1991
Event: CA Prioritization, Facility or area was assigned a low corrective action priority.

Event date: 05/01/2009
Event: RFA Determination Of Need For An RFI, RFI is Not Necessary;

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 07/17/2007
Date achieved compliance: 01/11/2008
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/15/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Used Oil - Generators
Date violation determined: 07/17/2007
Date achieved compliance: 01/11/2008
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/15/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 722.134(b)
Area of violation: Generators - General
Date violation determined: 07/21/2004
Date achieved compliance: 05/05/2005
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2005
Enf. disposition status: Not reported

KOPPERS INC (Continued) **1000346561**

Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 722.134(a)(4)&725.131
Area of violation: Generators - General
Date violation determined: 07/21/2004
Date achieved compliance: 05/05/2005
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/04/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.243
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 01/02/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.243
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.242(b)
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

KOPPERS INC (Continued) **1000346561**

Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 724.251
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 724.251
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 01/02/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: SR - 725.242(b)
Area of violation: TSD - Financial Requirements
Date violation determined: 10/28/1991
Date achieved compliance: 05/12/1992
Violation lead agency: State
Enforcement action: VIOLATION NOTICE (VN)
Enforcement action date: 01/02/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 11/03/1987
Date achieved compliance: 01/11/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/06/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

KOPPERS INC (Continued) **1000346561**

Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:

Evaluation date: 07/17/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Used Oil - Generators
Date achieved compliance: 01/11/2008
Evaluation lead agency: EPA

Evaluation date: 07/17/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/11/2008
Evaluation lead agency: EPA

Evaluation date: 09/02/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 07/21/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/05/2005
Evaluation lead agency: EPA

Evaluation date: 08/14/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 01/24/1994
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/19/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/28/1991
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 05/12/1992
Evaluation lead agency: State

Evaluation date: 06/21/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported

KOPPERS INC (Continued) **1000346561**

Evaluation lead agency: State

Evaluation date: 05/15/1990
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/14/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/22/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/22/1988
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/18/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/21/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/03/1987
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 01/11/1988
Evaluation lead agency: State

Evaluation date: 10/30/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110011828068

Environmental Interest/Information System
Not reported

AFS (Aerometric Information Retrieval System (AIRS) Facility

KOPPERS INC (Continued) **1000346561**

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.

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).

US EPA 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.

US Emissions & Generation Resource Database (EGRID) contains data on emissions and resource mix for virtually every power plant and company that generates electricity in the United States.

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.

US Facility Response Plan (FRP) contains plans for responding, to the maximum extent practical, to worst case discharges of oil.

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 it 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.

132 East 1/2-1 0.774 mi. 4085 ft. | **HOMAN CORP**
3650 S HOMAN AVE
CHICAGO, IL 60632 | **FINDS SSU AIRS** | **1004473255 N/A**

Relative: Higher

Actual: 603 ft.

FINDS:

Registry ID: 110001292583

Environmental Interest/Information System

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.

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).

SSU:

Facility ID:	0316005139
Facility Type:	Petroleum Release
Lat/Long:	0 / 0
Directions:	Not reported
Region:	Des Plaines
Current Program:	SSU
Project Manager:	Frierdich
Community Relations:	Not reported
SSU Status:	Active
US EPA Id:	ILD025045089
FOS:	Not reported
Year Completed:	Not reported
Year Entered:	2006
Site Size:	5

IL AIRS:

Facility ID:	3042
ID Number:	031600CTB
Year:	Not reported
Contact Name:	Irwin Peters
Contact Title:	Not reported
Contact Tele:	773-523-0250
Contact Extention:	Not reported
Contact EMail:	Not reported
Contact Fax:	773-523-3087
Cease Operation Date:	Not reported

HOMAN CORP (Continued) **1004473255**

SIC Code:	5171
Address Type Code:	LOC
Facility ID:	3042
ID Number:	031600CTB
Year:	2007
Contact Name:	Irwin Peters
Contact Title:	Not reported
Contact Tele:	773-523-0250
Contact Extention:	Not reported
Contact EMail:	Not reported
Contact Fax:	Not reported
Cease Operation Date:	Not reported
SIC Code:	5171
Address Type Code:	Not reported

133
West
1/2-1
0.840 mi.
4437 ft.

OLYMPIC OIL, LTD.
5000 WEST 41ST STREET
CICERO, IL 60804

SSU **S108493240**
SRP **N/A**
TIER 2

Relative:
Higher

Actual:
610 ft.

SSU:

Facility ID:	0313005023
Facility Type:	Not reported
Lat/Long:	0 / 0
Directions:	Not reported
Region:	Des Plaines
Current Program:	SRP
Project Manager:	Smith
Community Relations:	Not reported
SSU Status:	Transferred
US EPA Id:	Not reported
FOS:	Not reported
Year Completed:	Not reported
Year Entered:	Not reported
Site Size:	Not reported

SRP:

IL EPA Id:	0313005023
US EPA Id:	ILD980683551
Longitude:	-87.7488
Latitude:	41.81688
Contact Name:	Peter Kung
Contact Address:	5000 West 41st Street
Contact Address2:	Not reported
Contact City,St,Zip:	Cicero, IL 60804-
Contact Phone:	(708) 876-7900
Date Enrolled:	09/06/2007
Point Of Contact:	Keith R. Fetzner
Consultant Company:	Environmental Resources Management
Consultant Address:	1701 Golf Road
Consultant Address2:	Suite 1000
Consultant City,St,Zip:	Rolling Meadows, IL 60008-
Consultant Phone:	(847) 258-8900
Proj Mgr Assigned:	Smith
Sec. 4 Letter Date:	Not reported

OLYMPIC OIL, LTD. (Continued) **S108493240**

NFR Recorded:	Not reported
Active:	True
Total Acres:	8.67
No Further Remediation Letter Dt:	Not reported
Remediation Applicant Co:	Olympic Oil, Ltd.
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

TIER 2:

Corporate Name:	Olympic Oil, Ltd.
Latitude:	41.81747
Longitude:	-87.746200000000002
Chemical Name:	ETHYLHEXANOIC ACID
CAS Number:	149575
Max Daily Range:	10,000 - 99,999
Year:	2008

Corporate Name:	Olympic Oil, Ltd.
Latitude:	41.81747
Longitude:	-87.746200000000002
Chemical Name:	ANTI-FREEZE, [FLAMMABLE LIQUID]
CAS Number:	Not reported
Max Daily Range:	1,000,000 - 9,999,999
Year:	2008

Corporate Name:	Olympic Oil, Ltd.
Latitude:	41.81747
Longitude:	-87.746200000000002
Chemical Name:	PHOSPHORIC ACID
CAS Number:	7664382
Max Daily Range:	100,000 - 999,999
Year:	2008

Corporate Name:	Olympic Oil, Ltd.
Latitude:	41.81747
Longitude:	-87.746200000000002
Chemical Name:	ETHYLENE GLYCOL
CAS Number:	107211
Max Daily Range:	1,000,000 - 9,999,999
Year:	2008

Corporate Name:	Olympic Oil, Ltd.

OLYMPIC OIL, LTD. (Continued) **S108493240**

Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: BORAX
CAS Number: 1303964
Max Daily Range: 10,000 - 99,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM NITRATE
CAS Number: 7631994
Max Daily Range: 10,000 - 99,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PROPYLENE GLYCOL
CAS Number: 57556
Max Daily Range: 100,000 - 999,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ZINC/OIL BLEND ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000 - 999,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: CAUSTIC POTASH
CAS Number: 1310583
Max Daily Range: 100,000 - 999,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: OILS & OIL BLENDS
CAS Number: Not reported
Max Daily Range: 10,000,000 - 49,999,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM METASILICATE
CAS Number: 6834920
Max Daily Range: 10,000 - 99,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747

OLYMPIC OIL, LTD. (Continued) **S108493240**

Longitude: -87.746200000000002
Chemical Name: POLYMERIC ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000 - 999,999
Year: 2008

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ETHYLENE GLYCOL
CAS Number: 107211
Max Daily Range: 1,000,000 - 9,999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ETHYLHEXANOIC ACID
CAS Number: 149575
Max Daily Range: 10,000 - 99,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PHOSPHORIC ACID
CAS Number: 7664382
Max Daily Range: 100,000 - 999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM METASILICATE
CAS Number: 6834920
Max Daily Range: 10,000 - 99,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: BORAX
CAS Number: 1303964
Max Daily Range: 10,000 - 99,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: OILS & OIL BLENDS
CAS Number: Not reported
Max Daily Range: 10,000,000 - 49,999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002

OLYMPIC OIL, LTD. (Continued) **S108493240**

Chemical Name: PETROLEUM DISTILLATES, HYDROTREATED MIDDLE
CAS Number: 64742467
Max Daily Range: 10,000 - 99,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PROPYLENE GLYCOL
CAS Number: 57556
Max Daily Range: 100,000 - 999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM NITRATE
CAS Number: 7631994
Max Daily Range: 10,000 - 99,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ZINC/OIL BLEND ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000 - 999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ANTI-FREEZE
CAS Number: Not reported
Max Daily Range: 1,000,000 - 9,999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: POLYMERIC ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000 - 999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: CAUSTIC POTASH
CAS Number: 1310583
Max Daily Range: 100,000 - 999,999
Year: 2009

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PHOSPHORIC ACID

OLYMPIC OIL, LTD. (Continued) **S108493240**

CAS Number: 7664382
Max Daily Range: 100,000-999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: BORAX
CAS Number: 1303964
Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: CAUSTIC POTASH
CAS Number: 1310583
Max Daily Range: 100,000-999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PROPYLENE GLYCOL
CAS Number: 57556
Max Daily Range: 100,000-999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM METASILICATE
CAS Number: 6834920
Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ETHYLHEXANOIC ACID
CAS Number: 149575
Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: POLYMERIC ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000-999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: PETROLEUM DISTILLATES, HYDROTREATED MIDDLE
CAS Number: 64742467

OLYMPIC OIL, LTD. (Continued) **S108493240**

Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: SODIUM NITRATE
CAS Number: 7631994
Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: TALLOW METHYL ESTER (TME)
CAS Number: 67762383
Max Daily Range: 10,000-99,9999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ANTI-FREEZE
CAS Number: Not reported
Max Daily Range: 1,000,000-9,999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ETHYLENE GLYCOL
CAS Number: 107211
Max Daily Range: 1,000,000-9,999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: OILS & OIL BLENDS
CAS Number: Not reported
Max Daily Range: 10,000,000-49,999,999
Year: 2010

Corporate Name: Olympic Oil, Ltd.
Latitude: 41.81747
Longitude: -87.746200000000002
Chemical Name: ZINC/OIL BLEND ADDITIVES
CAS Number: Not reported
Max Daily Range: 100,000-999,999
Year: 2010

Count: 20 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CHICAGO	1000177452	FORMER PARCO PRODUCTS INC FACILITY	4710 ROOSEVELT ROAD	60650	CORRACTS,FINDS,RCRA-NLR,RAAT
CHICAGO	1011853849	GAS STATION	6434 S ARCHER	60638	FINDS
CHICAGO	1012172115	ROSELAND COMMUNITY	110TH PLACE AND MICHIGAN, EAST		BROWNFIELDS
CHICAGO	1012178749	COMED MANHOLE	26TH & PULASKI ST	60623	RCRA-NLR
CICERO	1012209927	ALL CITY ENVIRONMENTAL SERVICES	5001 W 40TH ST	60632	CERCLIS
CHICAGO	2000542071	BERWIN STATION	BERWIN STATION	0	ERNS
CHICAGO	2001569847	NEAR ADDISON STATION	NEAR ADDISON STATION	0	ERNS
CHICAGO	2007318421	55TH STREET STATION	55TH STREET STATION		ERNS
CHICAGO	2008877190	WESTERN STATION	WESTERN STATION		ERNS
CHICAGO	2008877392	ARGYLE STATION ON RED LINE	ARGYLE STATION ON RED LINE		ERNS
CHICAGO	2008888071	MONTROSS STATION	MONTROSS STATION		ERNS
	2008899072	CHICAGO UNION STATION	CHICAGO UNION STATION		ERNS
CHICAGO	2008908230	BLUE LINE CENTRAL STATION	BLUE LINE CENTRAL STATION		ERNS
	2009899072	CHICAGO UNION STATION	CHICAGO UNION STATION		ERNS
CHICAGO	2009908230	BLUE LINE CENTRAL STATION	BLUE LINE CENTRAL STATION		ERNS
CHICAGO	2010948714	BY CHICAGO'S UNION STATION	BY CHICAGO'S UNION STATION		ERNS
CHICAGO	2010952538	BERWYN STATION RED LINE	BERWYN STATION RED LINE		ERNS
CHICAGO	2010956157	POLK STATION	POLK STATION		ERNS
CHICAGO	2010960866	BROWN LINE AT KEDZIE STATION	BROWN LINE AT KEDZIE STATION		ERNS
	2011977731	LAKE MICHIGAN WILLAMETTE PUMPING S	LAKE MICHIGAN WILLAMETTE PUMPI		ERNS

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.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 07/12/2011
Next Scheduled EDR Contact: 10/24/2011
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: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 07/12/2011
Next Scheduled EDR Contact: 10/24/2011
Data Release Frequency: Quarterly

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: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

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: 06/30/2011	Source: EPA
Date Data Arrived at EDR: 07/12/2011	Telephone: N/A
Date Made Active in Reports: 09/29/2011	Last EDR Contact: 07/12/2011
Number of Days to Update: 79	Next Scheduled EDR Contact: 10/24/2011
	Data Release Frequency: Quarterly

Federal CERCLIS list

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: 02/25/2011	Source: EPA
Date Data Arrived at EDR: 03/01/2011	Telephone: 703-412-9810
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 09/01/2011
Number of Days to Update: 62	Next Scheduled EDR Contact: 12/12/2011
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPAa??s Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/11/2011	Telephone: 703-603-8704
Date Made Active in Reports: 02/16/2011	Last EDR Contact: 07/15/2011
Number of Days to Update: 36	Next Scheduled EDR Contact: 10/24/2011
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

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: 02/25/2011	Source: EPA
Date Data Arrived at EDR: 03/01/2011	Telephone: 703-412-9810
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 09/01/2011
Number of Days to Update: 62	Next Scheduled EDR Contact: 12/12/2011
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/09/2011
Date Data Arrived at EDR: 03/15/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 91

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

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. 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). 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.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

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. 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). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

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. 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). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

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. 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.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

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: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
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: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

Federal ERNS list

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: 07/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 86

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SSU: State Sites Unit Listing

The State Response Action Program database identifies the status of all sites under the responsibility of the Illinois EPA's State Sites Unit.

Date of Government Version: 08/16/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 09/30/2011
Number of Days to Update: 38

Source: Illinois Environmental Protection Agency
Telephone: 217-524-4826
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

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: 09/18/2009
Next Scheduled EDR Contact: 12/28/2009
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: 12/31/2009
Date Data Arrived at EDR: 05/17/2011
Date Made Active in Reports: 05/27/2011
Number of Days to Update: 10

Source: Illinois Environmental Protection Agency
Telephone: 217-785-8604
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Annually

LF SPECIAL WASTE: Special Waste Site List
These landfills, as of January 1, 1990, accept non-hazardous special waste pursuant to the Illinois EPA Non-Hazardous Special Waste Definition. List A includes landfills that may receive any non-hazardous waste, Non-Regional Pollution Control Facilities are so noted. List B includes landfills designed to receive specific non-hazardous wastes. List B landfills are designated as a Regional Pollution Control Facility by RPCF, or Non-Regional Pollution Control Facility by Non-RPCF.

Date of Government Version: 01/01/1990
Date Data Arrived at EDR: 06/17/2009
Date Made Active in Reports: 07/15/2009
Number of Days to Update: 28

Source: Illinois EPA
Telephone: 217-782-9288
Last EDR Contact: 06/10/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

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

CCDD: Clean Construction or Demolition Debris
Construction and demolition (C and D) debris is nonhazardous, uncontaminated material resulting from construction, remodeling, repair, or demolition of utilities, structures, and roads.

Date of Government Version: 07/21/2011
Date Data Arrived at EDR: 08/08/2011
Date Made Active in Reports: 08/26/2011
Number of Days to Update: 18

Source: Illinois EPA
Telephone: 217-524-3300
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

State and tribal leaking storage tank lists

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: 08/31/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 19

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6762
Last EDR Contact: 09/15/2011
Next Scheduled EDR Contact: 11/14/2011
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: 09/06/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 19

Source: Illinois EPA
Telephone: 217-782-6762
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

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: 01/31/2011
Date Data Arrived at EDR: 02/01/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 48

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

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: 05/05/2011
Date Data Arrived at EDR: 08/02/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 42

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
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: 02/16/2011
Date Data Arrived at EDR: 06/02/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 103

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
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: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

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: 08/01/2011
Date Data Arrived at EDR: 08/02/2011
Date Made Active in Reports: 08/25/2011
Number of Days to Update: 23

Source: Illinois State Fire Marshal
Telephone: 217-785-0969
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/01/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 18

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2011
Date Data Arrived at EDR: 06/01/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 13

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 05/05/2011
Date Data Arrived at EDR: 08/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Sites with Engineering Controls
Sites using of engineered barriers (e.g., asphalt or concrete paving).

Date of Government Version: 07/22/2011
Date Data Arrived at EDR: 07/27/2011
Date Made Active in Reports: 08/05/2011
Number of Days to Update: 9

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 07/27/2011
Next Scheduled EDR Contact: 11/07/2011
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: 07/22/2011
Date Data Arrived at EDR: 07/27/2011
Date Made Active in Reports: 08/05/2011
Number of Days to Update: 9

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 07/27/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 05/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 70

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

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: 07/22/2011
Date Data Arrived at EDR: 07/27/2011
Date Made Active in Reports: 08/05/2011
Number of Days to Update: 9

Source: Illinois Environmental Protection Agency
Telephone: 217-785-9407
Last EDR Contact: 07/27/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Semi-Annually

State and tribal Brownfields sites

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: 09/14/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 19

Source: Illinois Environmental Protection Agency
Telephone: 217-785-3486
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 11/14/2011
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: 08/02/2011
Date Data Arrived at EDR: 08/02/2011
Date Made Active in Reports: 08/25/2011
Number of Days to Update: 23

Source: Illinois Environmental Protection Agency
Telephone: 217-524-1658
Last EDR Contact: 08/02/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

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: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/28/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

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

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: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US 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: 06/08/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/07/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Quarterly

CDL: Meth Drug Lab Site Listing

A listing of clandestine/meth drug lab locations.

Date of Government Version: 07/25/2011
Date Data Arrived at EDR: 07/25/2011
Date Made Active in Reports: 08/05/2011
Number of Days to Update: 11

Source: Department of Public Health
Telephone: 217-782-5750
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

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: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Land Records

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: 09/09/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/12/2011
Next Scheduled EDR Contact: 11/14/2011
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: 07/11/2011
Next Scheduled EDR Contact: 09/05/2011
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/05/2011
Date Data Arrived at EDR: 07/05/2011
Date Made Active in Reports: 09/30/2011
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Annually

SPILLS: State spills
A listing of incidents reported to the Office of Emergency Response.

Date of Government Version: 09/06/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 26

Source: Illinois EPA
Telephone: 217-558-1677
Last EDR Contact: 09/02/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Varies

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators
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. 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). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/17/2011
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: 01/12/2011
Date Data Arrived at EDR: 02/11/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/09/2011
Next Scheduled EDR Contact: 11/21/2011
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: 888-275-8747
Last EDR Contact: 07/22/2011
Next Scheduled EDR Contact: 10/31/2011
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: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

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: 06/01/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 41

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
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: 07/31/2011
Date Data Arrived at EDR: 09/14/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/14/2011
Next Scheduled EDR Contact: 12/26/2011
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: 09/14/2010
Date Data Arrived at EDR: 10/21/2010
Date Made Active in Reports: 01/28/2011
Number of Days to Update: 99

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

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: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/08/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: Semi-Annually

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: 12/31/2009
Date Data Arrived at EDR: 12/17/2010
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 94

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
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: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/27/2011
Next Scheduled EDR Contact: 01/09/2012
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: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
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: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Quarterly

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: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement 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: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 08/18/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Annually

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: 01/07/2011
Date Data Arrived at EDR: 01/21/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
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: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/22/2011
Next Scheduled EDR Contact: 10/31/2011
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: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
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: 01/11/2011
Date Data Arrived at EDR: 01/13/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/12/2011
Next Scheduled EDR Contact: 10/24/2011
Data Release Frequency: Quarterly

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: 04/14/2010
Date Data Arrived at EDR: 04/16/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 41

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 09/13/2011
Next Scheduled EDR Contact: 12/26/2011
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: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
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: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Biennially

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: 09/15/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 14

Source: Illinois EPA
Telephone: 217-782-9878
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Varies

NPDES: A Listing of Active Permits

A listing of facilities currently active in the state. The types of permits are public, private, federal and state.

Date of Government Version: 07/12/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 08/05/2011
Number of Days to Update: 24

Source: Illinois EPA
Telephone: 217-782-0610
Last EDR Contact: 07/11/2011
Next Scheduled EDR Contact: 10/24/2011
Data Release Frequency: Varies

HWAR: Hazard Waste Annual Report

Each year, Illinois hazardous-waste generators tell the Illinois EPA the amounts and kinds of hazardous waste they produced during the previous year. Generators indicate by code the types of wastes produced and the steps they took to manage these wastes. If some or all of these wastes were sent to commercial treatment, storage, and disposal facilities (TSDFs), that information and the identity of each receiving facility also are submitted.
Illinois TSDFs likewise report the types and quantities of wastes received from in-state and out-of-state generators; they also report the procedures they used to manage these wastes.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 05/19/2011
Date Made Active in Reports: 06/06/2011
Number of Days to Update: 18

Source: Illinois EPA
Telephone: 217-524-3300
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: 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: 08/31/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/04/2011
Number of Days to Update: 14

Source: Drycleaner Environmental Response Trust Fund of Illinois
Telephone: 800-765-4041
Last EDR Contact: 09/01/2011
Next Scheduled EDR Contact: 12/12/2011
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

AIRS: AIRS

A listing of air permits and emissions information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 04/15/2011
Date Made Active in Reports: 04/26/2011
Number of Days to Update: 11

Source: Illinois EPA
Telephone: 217-557-0314
Last EDR Contact: 07/07/2011
Next Scheduled EDR Contact: 10/24/2011
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 05/24/2011
Date Made Active in Reports: 05/27/2011
Number of Days to Update: 3

Source: Illinois Emergency Management Agency
Telephone: 217-785-9860
Last EDR Contact: 08/22/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Annually

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: 07/22/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 07/15/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Varies

PIMW: Potentially Infectious Medical Waste

Potentially Infectious Medical Waste (PIMW) is waste generated in connection with the diagnosis, treatment (i.e., provision of medical services), or immunization of human beings or animals; research pertaining to the provision of medical services; or the provision or testing of biologicals.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/29/2011
Date Made Active in Reports: 07/05/2011
Number of Days to Update: 6

Source: Illinois EPA
Telephone: 217-524-3289
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE: Financial Assurance Information Listing

Information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/01/2010
Date Data Arrived at EDR: 06/03/2010
Date Made Active in Reports: 07/14/2010
Number of Days to Update: 41

Source: Illinois Environmental Protection Agency
Telephone: 217-782-9887
Last EDR Contact: 06/02/2010
Next Scheduled EDR Contact: 09/13/2010
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/16/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/05/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/22/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: N/A

EDR PROPRIETARY RECORDS

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

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: 12/31/2007
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/11/2009
Number of Days to Update: 16

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/26/2011
Next Scheduled EDR Contact: 12/05/2011
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/20/2011
Next Scheduled EDR Contact: 10/31/2011
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: 08/01/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 09/16/2011
Number of Days to Update: 38

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/09/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/14/2009
Number of Days to Update: 13

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/31/2011
Next Scheduled EDR Contact: 12/12/2011
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
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: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

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 2003 & 2011 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

FORMER CRAWFORD STATION MGP
3500 SOUTH PULASKI ROAD
CHICAGO, IL 60632

TARGET PROPERTY COORDINATES

Latitude (North):	41.82960 - 41˚ 49’ 46.6’’
Longitude (West):	87.7307 - 87˚ 43’ 50.5’’
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	439322.1
UTM Y (Meters):	4630902.0
Elevation:	594 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	41087-G6 ENGLEWOOD, IL
Most Recent Revision:	1997
West 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).

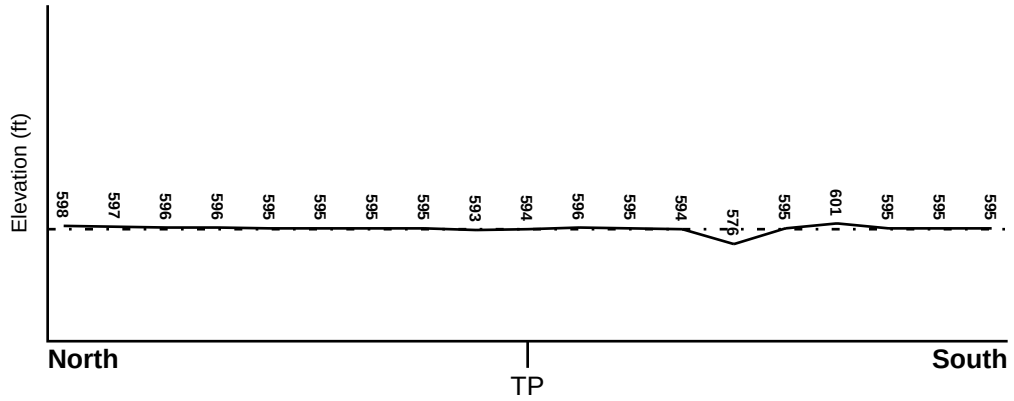
TOPOGRAPHIC INFORMATION

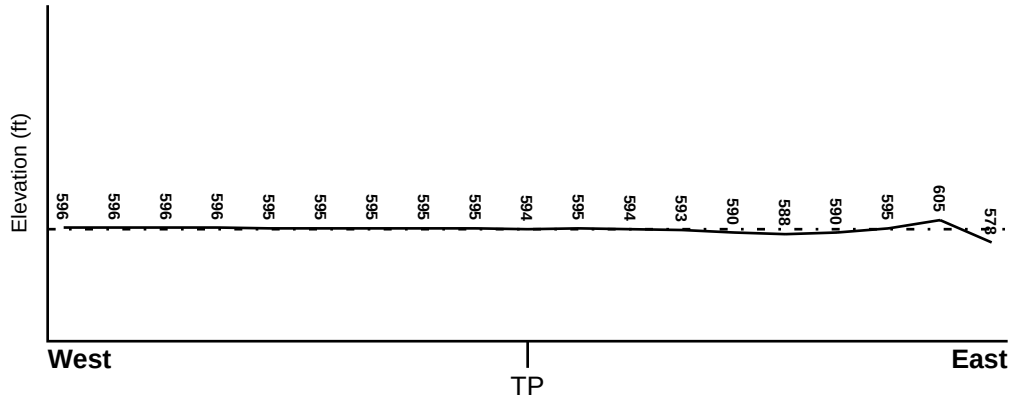
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 594 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: 17031C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ENGLEWOOD	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
1	1/8 - 1/4 Mile SW	W
3	1/2 - 1 Mile WSW	Not Reported
A4	1/2 - 1 Mile WSW	S
11	1/2 - 1 Mile South	Not Reported
12	1/2 - 1 Mile South	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: silt loam
fine sandy loam
loam
fine sand

Surficial Soil Types: silt loam
fine sandy loam
loam
fine sand

Shallow Soil Types: sandy loam

Deeper Soil Types: silt loam
sand
loamy sand
loam

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

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

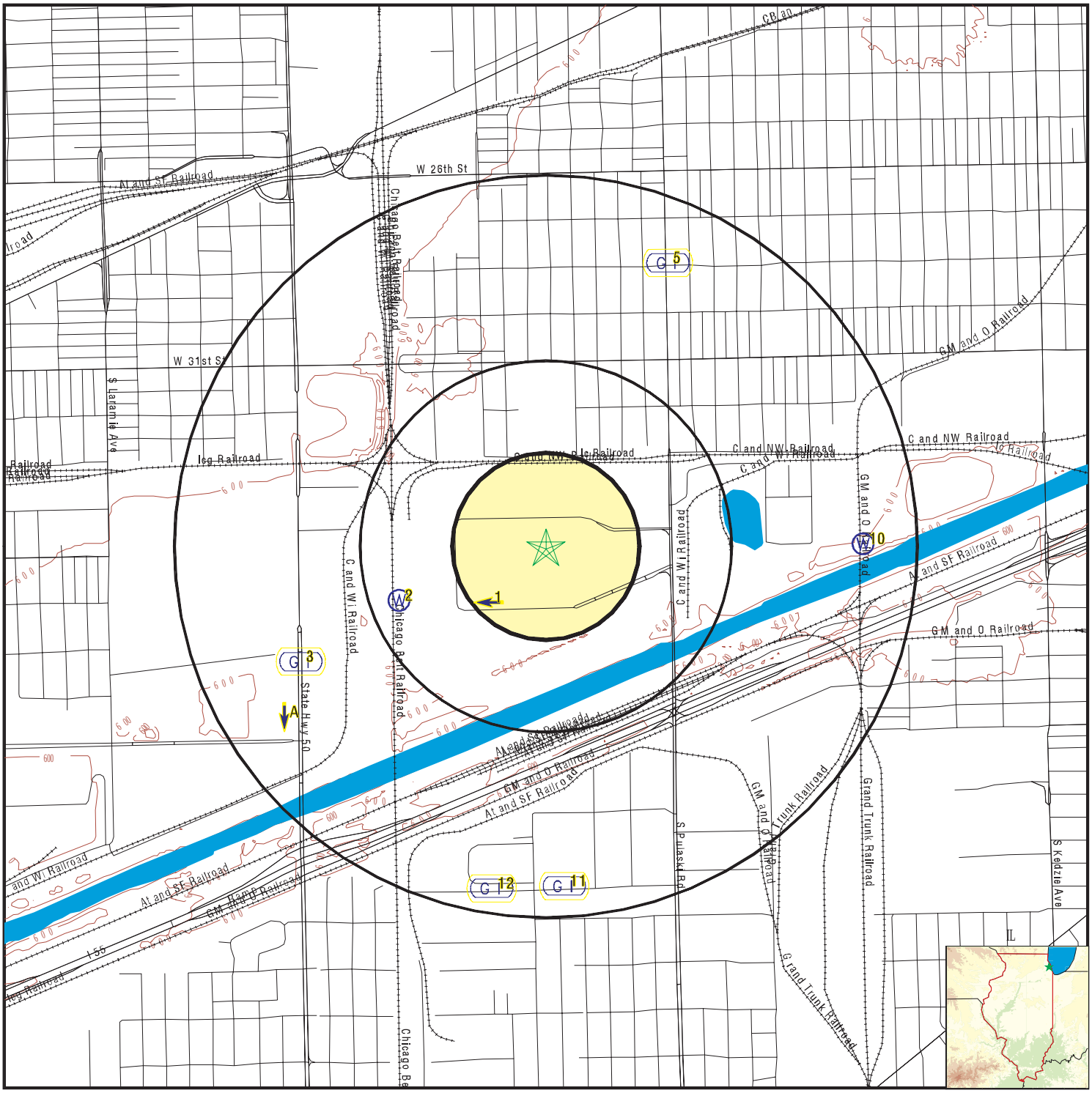
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	P6984	1/4 - 1/2 Mile WSW
A6	ILSG10000202039	1/2 - 1 Mile WSW
A7	ILSG10000202038	1/2 - 1 Mile WSW
A8	ILSG10000202041	1/2 - 1 Mile WSW
A9	ILSG10000202040	1/2 - 1 Mile WSW
10	P6985	1/2 - 1 Mile East

PHYSICAL SETTING SOURCE MAP - 3178504.2s



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
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data

0 1/4 1/2 1 Miles

N

SITE NAME:	Former Crawford Station MGP	CLIENT:	Natural Resource Technology
ADDRESS:	3500 South Pulaski Road Chicago IL 60632	CONTACT:	Ronald J. Horan
		INQUIRY #:	3178504.2s
LAT/LONG:	41.8296 / 87.7307	DATE:	October 04, 2011 1:10 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 **SW** **1/8 - 1/4 Mile** **Higher**	Site ID:	S102944510	**AQUIFLOW**	**56329**
	Groundwater Flow:	W		
	Deep Water Depth:	4.77		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	3.15		
	Current Deep Depth:	4.87		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	3.23		
	Date:	05/31/1996		

2
WSW
1/4 - 1/2 Mile
Higher

IL WELLS **P6984**

Well ID:	023908	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	AMERICAN CEREAL/ACME MALT CO		
Permit:	Not Reported	Date Drilled:	00/00/1900
Depth (in feet):	1600	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	39N	Range:	13E
Section:	34	Plot Location:	6D
Well Use:	IN	Well Type:	ASSUMED DRILLED
Record Type:	Any other type of record		
Driller:	Not Reported		

---

3 **WSW** **1/2 - 1 Mile** **Lower**	Site ID:	S100527471	**AQUIFLOW**	**27091**
	Groundwater Flow:	Not Reported		
	Deep Water Depth:	15		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	12		
	Current Deep Depth:	Not Reported		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	Not Reported		
	Date:	09/08/1994		

A4 **WSW** **1/2 - 1 Mile** **Higher**	Site ID:	S100527482	**AQUIFLOW**	**56341**
	Groundwater Flow:	S		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	9		
	Shallow Water Depth:	Not Reported		
	Current Deep Depth:	Not Reported		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	Not Reported		
	Date:	06/17/1997		

---

5 **NNE** **1/2 - 1 Mile** **Higher**	Site ID:	S102943684	**AQUIFLOW**	**62794**
	Groundwater Flow:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	Not Reported		
	Shallow Water Depth:	Not Reported		
	Current Deep Depth:	16.60		
	Current Average Depth:	Not Reported		
	Current Shallow Depth:	13.22		
	Date:	12/31/1997		

Map ID Direction Distance Elevation		Database	EDR ID Number
A6 **WSW** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**ILSG10000202039**

Api number:	120313243300		
Longitude:	-87.744516		
Latitude:	41.822886		
Section:	33	Twp:	39
Tdir:	N	Rng:	13
Rdir:	E	Farm name:	Rollins Leasing Corp.
Farm num:	MW-3	Company na:	CS Drilling
Status:	Water Well Monitoring Well	Elevation:	595
Elevref:	Not Reported	Total dept:	20
Wformation:	Not Reported	Wfmfrom:	0
Wfmto:	0	Pumpgpm:	0
Site id:	ILSG10000202039		

A7 **WSW** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**ILSG10000202038**

Api number:	120313243400		
Longitude:	-87.744516		
Latitude:	41.822886		
Section:	33	Twp:	39
Tdir:	N	Rng:	13
Rdir:	E	Farm name:	Rollins Leasing Corp.
Farm num:	MW-4	Company na:	CS Drilling
Status:	Water Well Monitoring Well	Elevation:	595
Elevref:	Not Reported	Total dept:	20
Wformation:	Not Reported	Wfmfrom:	0
Wfmto:	0	Pumpgpm:	0
Site id:	ILSG10000202038		

A8 **WSW** **1/2 - 1 Mile** **Higher**		**IL WELLS**	**ILSG10000202041**

Api number:	120313243100		
Longitude:	-87.744516		
Latitude:	41.822886		
Section:	33	Twp:	39
Tdir:	N	Rng:	13
Rdir:	E	Farm name:	Rollins Leasing Corp.
Farm num:	MW-1	Company na:	CS Drilling
Status:	Water Well Monitoring Well	Elevation:	595
Elevref:	Not Reported	Total dept:	20
Wformation:	Not Reported	Wfmfrom:	0

Wfmto:	0	Pumpgpm:	0
Site id:	ILSG10000202041		

A9
WSW
1/2 - 1 Mile
Higher

IL WELLS **ILSG10000202040**

Api number:	120313243200		
Longitude:	-87.744516		
Latitude:	41.822886		
Section:	33	Twp:	39
Tdir:	N	Rng:	13
Rdir:	E	Farm name:	Rollins Leasing Corp.
Farm num:	MW-2	Company na:	CS Drilling
Status:	Water Well Monitoring Well	Elevation:	595
Elevref:	Not Reported	Total dept:	20
Wformation:	Not Reported	Wfmfrom:	0
Wfmto:	0	Pumpgpm:	0
Site id:	ILSG10000202040		

10
East
1/2 - 1 Mile
Higher

IL WELLS **P6985**

Well ID:	033777	Second ID:	Not Reported
Info Source:	IL Private Water Wells Survey		
Owner:	LIQUID CARBONIC CORP (POWER PL		
Permit:	Not Reported	Date Drilled:	00/00/1912
Depth (in feet):	1650	Aquifer Type:	Bedrock
County Code:	031	County:	COOK
Township:	39N	Range:	13E
Section:	35	Plot Location:	Not Reported
Well Use:	IN	Well Type:	||
Record Type:	Geology,Chemical Analysis,Indicates comment in owner's field something unusual,Any other type of record		
Driller:	GEIGER		

11
South
1/2 - 1 Mile
Higher

AQUIFLOW **62139**

Site ID:	S102944266
Groundwater Flow:	Not Reported
Deep Water Depth:	15
Average Water Depth:	Not Reported
Shallow Water Depth:	8
Current Deep Depth:	9
Current Average Depth:	Not Reported
Current Shallow Depth:	7
Date:	04/14/1994

12
South
1/2 - 1 Mile
Higher

AQUIFLOW **25596**

Site ID:	S100530370
Groundwater Flow:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	3
Shallow Water Depth:	Not Reported
Current Deep Depth:	Not Reported
Current Average Depth:	3
Current Shallow Depth:	Not Reported
Date:	8/3/89

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

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 2003 & 2011 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 A3

BROWN'S DIRECTORY INFORMATION

Carlinville Gas and Electric Light Works, Carlinville.

Capital stock (private capital).
President, W. L. Mounts.
Treasurer, W. L. Mounts.
Secretary, W. S. Mounts.
Purchasing Agent, W. S Mounts.
Superintendent, W. S. Mounts.
Process of Manufacture, Lowe-Springer.
Population, 4,000.
Price of Gas in 1892 for light, $2; for fuel, $1.50.
Number of public lamps, electric.
Approximate annual output, 3,130,000.
Candle power, 22.

ELECTRICAL DEPARTMENT.

Operate Brush System of Arc Lights, 39 Lights, Bernstein System of Incandescent Lights, 10-100 c. p. lights.
Price of Arc lights for public lighting per light per year, $80.
Price of Commercial Arc Lights per light per year, $90.
Total number of lighting hours per annum, until midnight every night.

Centralia Gas Light Co., Centralia.

Capital stock, $35,000.
President, S. M. Warner.
Treasurer, Ferdinand Kohl.
Secretary, Ferdinand Kohl.
Purchasing Agent, T. L. Parkinson.
Superintendent, T. L. Parkinson.
Process of Manufacture, Coal.
Population, 6,000.
Price of Gas in 1892 for light, $1; for fuel, $1.
Number of public lamps, 74.
Total lighting hours per lamp per annum, 1,020.
Approximate annual output, 5,200,000.
Candle power, 18.

Champaign and Urbana Gas Light and Coke Co., Champaign.

Owner, Thos. R. White, Jr., New York.
Superintendent, A. J. Chesebro.
Process of Manufacture, Coal.
Population, 7,000.
Price of Gas in 1892 for light, $2.
Approximate annual output, 6,000,000.
Candle power, 18.

Chicago Gas Light & Coke Company, Chicago.

Capital stock, $4,984,200.
Total bonds outstanding, $8,350,000.
President, E. J. Jerzmanowski.
Vice-President, C. K. G. Billings.
2d Vice-President and Engr., Geo. O. Knapp.
Secretary and Treasurer, C. K. Wooster.
Process of Manufacture, Springer, Lowe Improved, Hanlon-Leadley.
Population, 1,200,000.
Price of Gas in 1892 for light, $1.25 net; for fuel, $1 net.
Number of Public Lamps, 7,137. Price, $1 per M.
Total lighting hours per lamp per annum, 3,700.
Approximate annual output, 1,532,000,000.
Candle power, 24.

Consumers' Gas Co., Chicago.

Capital stock, $5,000,000.
Total bonds outstanding, $3,732,000.
President, C. E. Judson.
Treasurer, C. F. Bryant.
Secretary, C. F. Bryant.
Process of Manufacture, Lowe, Springer and Flannery.
Population, 1,150,000.
Price of Gas in 1892 for light, $1.25 net; for fuel, $1 net.
Number of public lamps, 193. Price, $20.
Total lighting hours per lamp per annum, 3,786.
Approximate annual output, 1,000,000,000.
Candle power, $24\frac{6}{10}$.

Equitable Gas Light and Fuel Co., Chicago.

Capital stock, $3,000,000.
Total bonds outstanding, $2,000,000.
President, Geo. O. Knapp.
Treasurer, C. K. Wooster.
Secretary, C. K. Wooster.
Superintendent, John Williamson.
Process of Manufacture, Jerzmanowski.
Population, 1,200,000.
Price of Gas in 1892 for light, $1.25 net; for fuel, $1 net.
Approximate annual output, 398,000,000.
Candle power, 26.

Hyde Park Gas Co. (Hyde Park), Chicago.

Capital stock, $300,000.
Total bonds outstanding, $200,000.
President, C. E. Judson.
Treasurer, C. F. Bryant.
Secretary, C. F. Bryant.
Superintendent, A. A. Chichester.
Gas purchased from the Consumers' Gas Co.
Population, 1,200,000.
Price of Gas in 1892 for light, $1.25 net; for fuel, $1 net.
Number of public lamps, 2,177. Price, $20 per M.
Total lighting hours per lamp per annum, 3,782.
Approximate annual output, 174,600,000.
Candle power, 24.

Lake Gas Co. (Englewood), Chicago.

Capital stock, $800,000.
Total bonds outstanding, $300,000.
President, C. E. Judson.
Treasurer, C. F. Bryant.
Secretary, C. F. Bryant.
Superintendent, A. A. Chichester.
Process of Manufacture, buy from Consumers' Gas Co.
Price of Gas in 1892 for light, $1.25; for fuel, $1.
Number of public lamps, 1,283. Price, $20.
Total lighting hours per lamp per annum, 3,786.
Approximate annual output, 158,000,000.
Candle power, $24\frac{1}{4}$.

The Mutual Fuel Gas Co., Chicago.

Capital stock, $500,000.
President, George M. Bogue.
Treasurer, John J. Mitchell.
Secretary, C. H. Randle.

The best of everything is none too good for General Andrew Hickenlooper's Cincinnati Gas Light Company. He wanted the best and bought Fort Wayne apparatus. See advertisement, page xvi.

General Manager, C. H. Randle.
Process of Manufacture, Fahnehjelm System.
Population, 125,000.
Price of Gas in 1892 for light, 50c.; for fuel, 50c.
Approximate annual output, 200,000,000.
Candle power, 22 to 30.

The People's Gas Light and Coke Co., Chicago.

Capital stock, $4,000,000.
Total bonds outstanding, $4,600,000.
President, C. K. G. Billings.
Vice-President and Engineer, George O. Knapp.
Treasurer, H. J. Jones
Secretary, John S. Zimmerman.
Superintendent, John Williamson.
Process of Manufacture, Modification of Lowe process.
Population, about 400,000.
Price of Gas in 1892 for light, $1.25 net; for fuel, $1 net.
Number of public lamps, 14,000. Price, $20.
Lighting hours per lamp per annum, 3,786.
Approximate annual output, 100,000,000.
Candle power, 22.

Danville Gas, Electric Light and Street Railway Co., Danville.

Capital stock, $250,000.
President, Frank W. Penwell.
Vice-President, A. C. Daniels.
Treasurer, Wm. P. Cannon.
Secretary, Wm. P. Cannon.
Gas Superintendent, A. Meyers; Street R. R., M. Conners.
General Manager, Frank W. Penwell.
Process of Manufacture, Coal.
Population, 12,000.
Price of Gas in 1892 for light, $1.40 to $1.60; for fuel, $3.40.
Approximate annual output, 13,000,000.
Candle power, 20.

ELECTRICAL DEPARTMENT.

Operate Fort Wayne System of Arc Lights, 175 Lights; Incandescent Lights, 300 Lights.
Price of Arc Lights for public lighting per light per year, $85.
Price of Commercial Arc Lights per light per month, $7 to $9.
Superintendent Electric Light, O. J. Penwell.

Decatur Gas Light and Coke Co., Decatur.

Capital stock, $100,000.
Total bonds outstanding, $50,000.
President, John K. Warren.
Treasurer, B. K. Durfee.
Secretary, B. K. Durfee.
Purchasing Agent, R. J. Stratton.
Superintendent, R. J. Stratton.
Process of Manufacture, Coal.
Population, 20,000.
Price of Gas in 1892 for light, $1.50 to $2; for fuel, $1.50.
Approximate annual output, 14,000,000.
Candle power, 18.

ELECTRICAL DEPARTMENT.

Operate Thomson-Houston and United States Systems of Arc Lights, 70 Lights; Edison and Westinghouse Systems of Incandescent Lights, 1,600 Lights.
Price of Commercial Arc Lights per light per year, $108.

Dixon Power & Lighting Company, Dixon.

Capital stock, $75,000.
President, F. A. Watson.
Vice-President, Geo. Steele.
Treasurer, G. C. Loveland.
Secretary, G. C. Loveland.
Purchasing Agent, Ed. P. Maxwell.
Superintendent, Ed. P. Maxwell.
Process of Manufacture, Patton.
Population, 7,000.
Price of Gas in 1892 for light, $1.90 to $2; for fuel, $1.
Number of public lamps, 71. Price, $35.

ELECTRICAL DEPARTMENT.

Operate Thomson-Houston System 24 Arc Lights, 1,400 alternating, T.-H. Incandescent.
Price of Arc Lights for public lighting per light per year, $90.
Price of Commercial Arc Lights per light per month, $6 to $7.50.

DuQuoin Light, Heat and Power Co., DuQuoin.

Capital stock, $50,000.
President, W. E. Brookings.
Treasurer, Lew Smith.
Secretary, J. M. Browning.
Purchasing Agent, Valle Nettelton.
Superintendent, Harry Maguire.
Process of Manufacture, Coal.
Population, 6,500.
Price of Gas in 1892 for light, $1.50; for fuel, $1.25 to $1.05.
Number of public lamps, 150. Price, $15.25.
Approximate annual output, 10,000,000.
Candle power, 16.

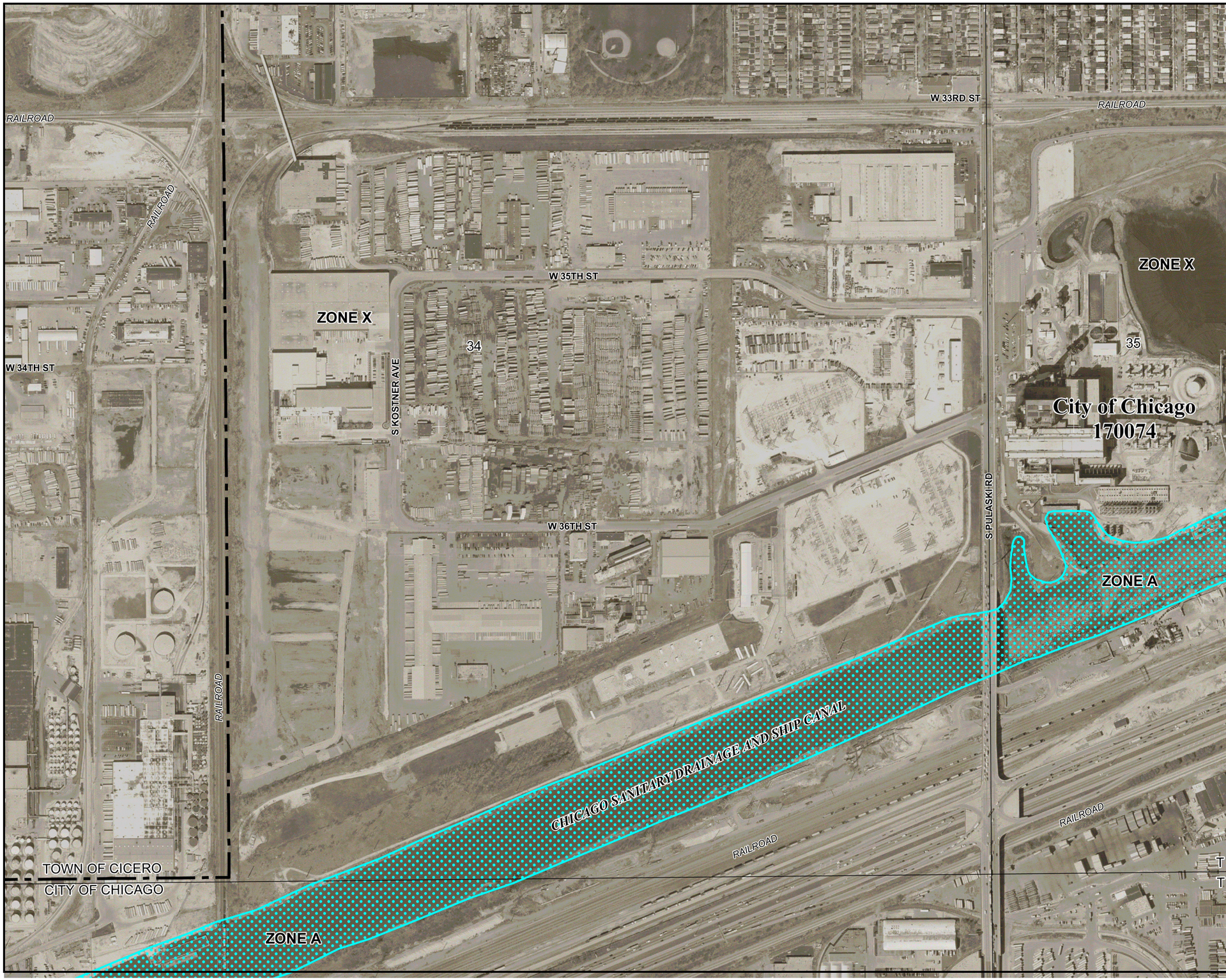
East St. Louis Gas Works, E. St. Louis.

Treasurer, W. D. Griswald, sole owner.
Secretary, W. D. Griswald.
Purchasing Agent, G. W. Ewing.
Superintendent, G. W. Ewing.
Process of Manufacture, Coal.
Population, 16,000.
Price of Gas in 1892 for light, $1.80; for fuel, $1.60.
Approximate annual output, 15,000,000.
Candle power, 18.

General Hickenlooper wrote to the Fort Wayne Company, "the most thorough examination by an expert, employed for the purpose, resulted in the adoption by us of the Fort Wayne Arc and Alternating Systems, and our practical experience in their use has been extremely satisfactory." See advertisement, page xvi.

APPENDIX A4

CULTURAL AND NATURAL RESOURCE DATA



MAP SCALE 1" = 500'

250 0 500 1000 FEET

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

EcoCAT Ecological Compliance Assessment Tool

Print Report

Enter Another Project

Exit EcoCAT

1 / 2 Main Report 100%

EcoCAT Ecological Compliance Assessment Tool

Applicant:	Integrys Business Support, LLC	*IDNR Project #:*	1208528
Contact:	Jamie Nuthals	Date:	02/07/2012
Address:	700 North Adams Street Green Bay, WI 54307		

Project: Crawford Station Site
Address: 4161 W 36th Street, Chicago

Description: The project is to perform an environmental investigation of a former manufactured gas plant site. The work is being done per an order with the U.S. Environmental Protection Agency

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

38N, 13E, 3 39N, 13E, 34
39N, 13E, 35

IL Department of Natural Resources Contact
Rick Pietruszka
217-785-5500
Division of Ecosystems & Environment

Local or State Government Jurisdiction
People's Gas
Naren Prasad
4161 West 36th Street
Chicago, Illinois 60632

U.S. Fish and Wildlife Service

National Wetlands Inventory

NWI Wetland Mapper-Crawford Station Site

Feb 6, 2012

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Image Year

- 2000's
- 1990's
- 1980's
- 1970's
- No Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Wetland Source from 1980's therefore, the Freshwater Emergent appears outdated.

APPENDIX A5

PREVIOUS REPORTS (SINCE COMPLETION REPORT)

EPI

Environmental
Protection
Industries

Environmental

Engineering

Consultants

Appendix F

Previous Reports

LFR
LEVINE • FRICKE

March 10, 1999
VIA OVERNIGHT FEDERAL EXPRESS

6889.00

Bismarck Brackett
Urban Investment Research Corporation
4201 West 36th Street
Chicago, Illinois 60623

Subject: Preliminary Results: 36th Street Option Property Site Investigation

Dear Mr. Brackett:

LFR Levine· Fricke is pleased to submit to Urban Investment Research Corporation (UIRC) this letter report regarding the Option Property Site Investigation at 4220 West 36th Street, Chicago, Illinois (the "Site). This report provides details of the soil sampling activities completed at the Site on February 19, 1999.

This work was conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The observations and conclusions presented in this document are professional opinions based on the scope of activities, work schedule, and information obtained, and has been prepared for the exclusive use of UIRC or its lenders. No representations, express or implied, and no warranty or guarantee is included or intended, including reuse of this document for purposes other than originally intended.

Site Description

The Site is an approximately 5-acre parcel that is fenced and covered with gravel. The Site is currently used to store semi-trailers and intermodal containers. Adjacent land use is predominately commercial/industrial. The Site location is shown in Figure 1.

The Site is a subparcel of a former manufactured gas plant (MGP). Based on information shown in a 1945 drawing of the MGP facility ("Skeleton Map of Crawford Station", January 1945) the Site was predominately occupied by material handling equipment, including railroad tracks and pipe runs. In addition, the following structures are shown on or near the Site:

- Tar Decanter Tank – in the northwestern corner of the Site
- Electrical Substation – on or adjacent (offsite) to the center of the northern Site border
- Ovens – traversing the central part of the Site from the southwestern to northeastern corners of the Site.

630 Tollgate Road, Suite D, Elgin, Illinois 60123-9364 • (847) 695-8855 • *fax* (847) 695-7799 • *www.lfr.com*
Offices Worldwide

Thallium was the only metal detected at a concentration greater than its remediation objective for this exposure route. Thallium was detected at concentrations ranging from 28 to 61 mg/kg in soil borings SB3, SB4, SB5 and SB11. The remediation objective for Thallium is 3.8 mg/kg for this exposure route.

Conclusions

The data generated during this investigation indicates that the Site has been impacted by past operations. Based on the information gathered in this investigation, the level of impact does exceed current Illinois Tier 1 remediation objectives.

Information gathered in this investigation was based on completion of soil borings and analysis of soil samples collected at accessible locations. In addition, a single soil sample was collected from each of 10 soil borings. Therefore, data gaps may exist and further investigation is needed to fully evaluate site conditions.

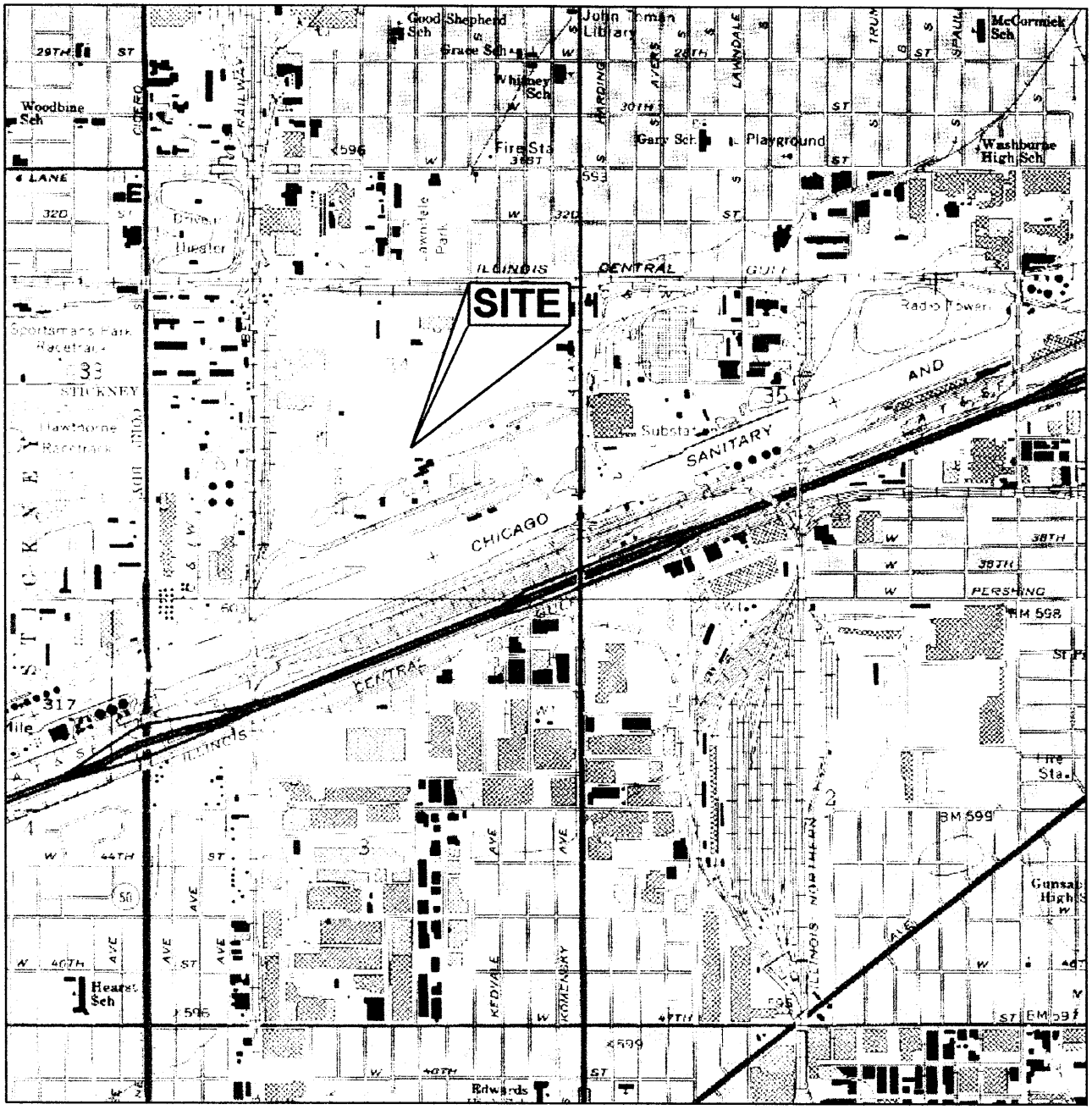
If you have any questions please contact either of the undersigned at (847) 695-8855.

Sincerely,

John P. Chitwood, L.P.G.
Project Geologist

William A. Bow, C.P.G.
Senior Associate Geologist

Enclosures



SITE LOCATION MAP

0 2000 FT.

BASE MAP FROM 1963
PHOTOREVISED 1972 AND 1980
USGS 7.5 MINUTE NW
ENGLEWOOD 15' QUADRANGLE
ENGLEWOOD, ILLINOIS

Urban Research Investment Corporation

Site Location Map
4220 W. 36th Street
Chicago, Illinois

Figure 1
Project No. 6889

6889-01_030299JPC/ ryk

LFR LEVINE•FRICKE

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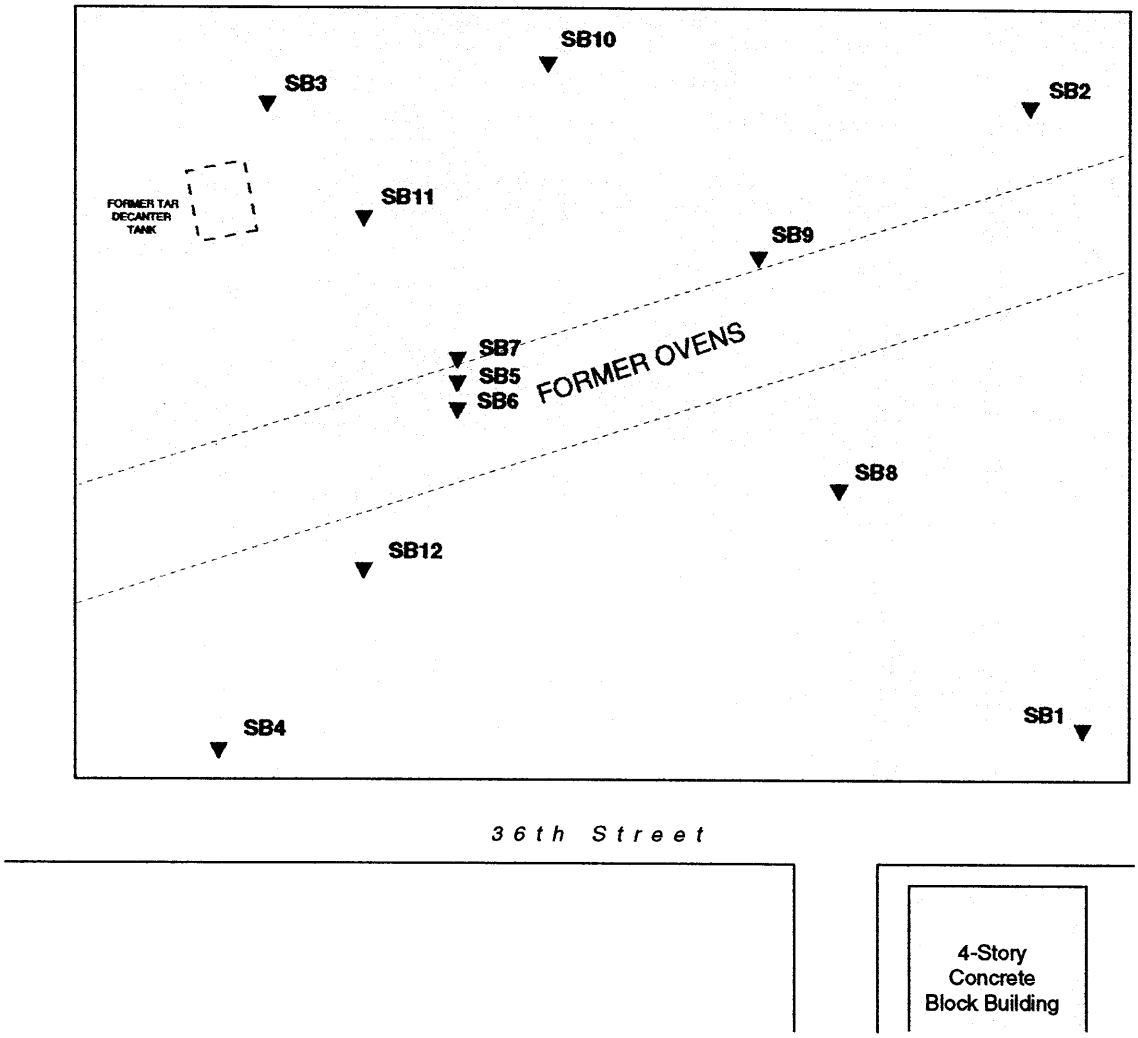

EXPLANATION

▼ SOIL BORING (APPROXIMATE LOCATION)

FORMER STRUCTURE (APPROXIMATE LOCATIONS FROM "SKELETON MAP OF CRAWFORD STATION" THE PEOPLES GAS LIGHT AND COKE CO., JANUARY 1945)

N

0 100 Feet

Urban Research Investment Corporation

Option Property
4220 W. 36th Street
Chicago, Illinois

Figure 2
Project No. 6889

6889-02_030299JPC, nyk

LFR LEVINE•FRICKE

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
February 19, 1999
Volatile Organic Compounds (SW846 Method 8260)

Option Property, 4220 W. 36th Street, Chicago, Illinois

LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample Number and Depth (feet)										Illinois Remediation Objectives Industrial/Commercial Property		
	SB1 4 - 6	SB2 2 - 4	SB3 9 - 11	SB4 2 - 4	SB5 4 - 6	SB8 10 -11	SB9 5 - 7	SB10 10- 12	SB11 14 - 16	SB12 9 - 11	Ingestion	Inhalation	Soil to Groundwater
Acetone	< 0.119	< 0.114	< 0.100	< 0.117	< 0.120	< 0.119	< 0.114	< 0.120	0.175	< 0.120	200,000	100,000	16
Acrylonitrile	< 0.060	< 0.057	< 0.050	< 0.059	< 0.060	< 0.060	< 0.057	< 0.060	< 0.073	< 0.060	---	---	---
Benzene	< 0.006	< 0.0057	**31.8**	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	200	1.5	0.03
Bromobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Bromochloromethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Bromodichloromethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	92	3,000	0.6
Bromoform	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	720	100	0.8
Bromomethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	1,000	3.9	0.2
n-Butylbenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
sec-Butylbenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
tert-Butylbenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Carbon tetrachloride	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	44	0.64	0.07
Chlorobenzene	< 0.006	< 0.0057	0.0068	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	4,100	1.3	1
Chlorodibromomethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	41,000	1,300	0.4
Chloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Chloroform	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	940	0.54	0.6
Chloromethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
2-Chlorotoluene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
4-Chlorotoluene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,2-Dibromo-3-chloropropane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	4	0.11	0.002
1,2-Dibromoethane (EDB)	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	0.07	0.32	0.0004
Dibromomethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,2-Dichlorobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,3-Dichlorobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,4-Dichlorobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---

TABLE 1 (Continued)
SOIL SAMPLE ANALYTICAL RESULTS
February 19, 1999
Volatile Organic Compounds (SW846 Method 8260)

Option Property, 4220 W. 36th Street, Chicago, Illinois
LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample Number and Depth (feet)										Illinois Remediation Objectives Industrial/Commercial Property		
	SB1 4 - 6	SB2 2 - 4	SB3 9 - 11	SB4 2 - 4	SB5 4 - 6	SB8 10 -11	SB9 5 - 7	SB10 10- 12	SB11 14 - 16	SB12 9 - 11	Ingestion	Inhalation	Soil to Groundwater
Dichlorodifluoromethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,1-Dichloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	200,000	130	23
1,2-Dichloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	63	0.7	0.02
1,1-Dichloroethene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	1,800	1,500	0.06
cis-1,2-Dichloroethene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	20,000	1,200	0.4
trans-1,2-Dichloroethene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	41,000	3,100	0.7
1,2-Dichloropropane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	84	0.5	0.03
1,3-Dichloropropane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
2,2-Dichloropropane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,1-Dichloropropene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
cis-1,3-Dichloropropene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	33	0.23	0.004
trans-1,3-Dichloropropene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006			
Ethylbenzene	< 0.006	< 0.0057	3.91	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	20,000	58	13
2-Hexanone	< 0.119	< 0.114	< 0.100	< 0.117	< 0.120	< 0.119	< 0.114	< 0.120	< 0.146	< 0.120	---	---	---
Hexachlorobutadiene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Iodomethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Isopropylbenzene	< 0.006	< 0.0057	0.147	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
p-Isopropyltoluene	< 0.006	< 0.0057	0.159	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Methyl Ethyl Ketone	< 0.119	< 0.114	< 0.100	< 0.117	< 0.120	< 0.119	< 0.114	< 0.120	< 0.146	< 0.120	---	---	---
Methyl Isobutyl Ketone	< 0.119	< 0.114	< 0.100	< 0.117	< 0.120	< 0.119	< 0.114	< 0.120	< 0.146	< 0.120	---	---	---
Methylene Chloride	< 0.060	< 0.057	< 0.050	< 0.059	< 0.060	< 0.060	< 0.057	< 0.060	< 0.073	< 0.060	760	24	0.02
Methyl-tert-butyl ether	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Naphthalene	0.01	< 0.0057	**106**	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	8,200	---	84
n-propylbenzene	< 0.006	< 0.0057	0.477	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Styrene	< 0.006	< 0.0057	**14.7**	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	41,000	430	4
1,1,1,2-Tetrachloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---

TABLE 1 (Continued)
SOIL SAMPLE ANALYTICAL RESULTS
February 19, 1999
Volatile Organic Compounds (SW846 Method 8260)
Option Property, 4220 W. 36th Street, Chicago, Illinois
LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample Number and Depth (feet)										Illinois Remediation Objectives Industrial/Commercial Property		
	SB1 4 - 6	SB2 2 - 4	SB3 9 - 11	SB4 2 - 4	SB5 4 - 6	SB8 10 -11	SB9 5 - 7	SB10 10- 12	SB11 14 - 16	SB12 9 - 11	Ingestion	Inhalation	Soil to Groundwater
1,1,2,2-Tetrachloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Tetrachloroethene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	110	20	0.06
Toluene	< 0.006	< 0.0057	44	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	410,000	42	12
1,2,3-Trichlorobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,2,4-Trichlorobenzene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	2,000	920	5
1,1,1-Trichloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	1,200	2
1,1,2-Trichloroethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	8,200	1,800	0.02
Trichloroethene	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	520	8.9	0.06
Trichlorofluoromethane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,2,3-Trichloropropane	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,2,4-Trimethylbenzene	< 0.006	< 0.0057	22	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
1,3,5-Trimethylbenzene	< 0.006	< 0.0057	13.4	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	---	---	---
Vinyl chloride	< 0.006	< 0.0057	< 0.0050	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	3	0.06	0.01
Xylenes	< 0.006	< 0.0057	62.3	< 0.0059	< 0.006	< 0.006	< 0.0057	< 0.006	< 0.0073	< 0.006	410,000	410	150

Remediation objectives are in accordance with the State of Illinois Tiered Approach to Corrective Action Objectives (35 Illinois Adminstrative Code, Part 742).
Ingestion and inhalation remediation objectives are the most restrictive for the Tier 1 industrial/commercial or construction worker exposure routes.
Soil to groundwater remediation objectives are for the soil component of the Class I groundwater exposure route.
"<" symbol indicates the compound was not detected above the displayed method detection limit.
"---" symbol indicates that no remediation objective has been established for this exposure route.

TABLE 2
RESULTS OF SOIL SAMPLE ANALYSIS
February 19, 1999 Soil Sampling
Semivolatile Organic Compounds (SW846 Method 8270)

Option Property, 4220 W. 36th Street, Chicago, Illinois
LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample and Depth (feet)				Illinois Remediation Objectives Industrial/Commercial Property		
	SB2	SB4	SB8	SB10			
	2 - 4	2 - 4	10 -11	10- 12	Ingestion	Inhalation	Soil to Groundwater
4-Chloro-3-methylphenol	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
2-Chlorophenol	< 0.376	< 0.387	< 0.394	< 0.396	10,000	53,000	4
2,4-Dichlorophenol	< 0.376	< 0.387	< 0.394	< 0.396	610	---	1
2,4-Dimethylphenol	< 0.376	< 0.387	< 0.394	< 0.396	41,000	---	9
2,4-Dinitrophenol	< 1.820	< 1.880	< 1.910	< 1.920	410	---	0.2
2-Methyl-4,6-dinitrophenol	< 1.820	< 1.880	< 1.910	< 1.920	---	---	---
2-Nitrophenol	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
4-Nitrophenol	< 1.820	< 1.880	< 1.910	< 1.920	---	---	---
Pentachlorophenol	< 1.820	< 1.880	< 1.910	< 1.920	24	---	0.03
Phenol	< 0.376	< 0.387	< 0.394	< 0.396	120,000	---	100
2,4,6-Trichlorophenol	< 0.376	< 0.387	< 0.394	< 0.396	520	390	0.2
Acenaphthene	< 0.376	< 0.387	< 0.394	< 0.396	120,000	---	570
Acenaphthylene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Anthracene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Benzo(a)anthracene	0.683	< 0.387	< 0.394	< 0.396	8	---	2
Benzo(b)fluoranthene	0.652	< 0.387	< 0.394	< 0.396	8	---	5
Benzo(k)fluoranthene	0.621	< 0.387	< 0.394	< 0.396	78	---	49
Benzo(g,h,i)perylene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Benzo(a)pyrene	0.631	< 0.387	< 0.394	< 0.396	0.8	---	8
Benzyl butyl phthalate	< 0.376	< 0.387	< 0.394	< 0.396	410,000	930	930
Bis(2-chloroethoxy)methane	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Bis(2-chloroethyl)ether	< 0.376	< 0.387	< 0.394	< 0.396	5	0.47	0.0004
Bis(2-chloroisopropyl)ether	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Bis(2-ethylhexyl)phthalate	< 0.376	< 0.387	< 0.394	< 0.396	410	31,000	3,600
4-Bromophenyl phenyl ether	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
2-Chloronaphthalene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
4-Chlorophenyl phenyl ether	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Chrysene	0.772	< 0.387	< 0.394	< 0.396	780	---	160
Dibenzo(a,h)anthracene	< 0.376	< 0.387	< 0.394	< 0.396	0.8	---	2
Di-n-butyl phthalate	< 0.376	< 0.387	< 0.394	< 0.396	200,000	2,300	2,300
1,2-Dichlorobenzene	< 0.376	< 0.387	< 0.394	< 0.396	18,000	310	17
1,3-Dichlorobenzene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
1,4-Dichlorobenzene	< 0.376	< 0.387	< 0.394	< 0.396	---	340	2
3,3'-Dichlorobenzidine	< 0.753	< 0.775	< 0.789	< 0.791	13	---	0.007
Diethyl phthalate	< 0.376	< 0.387	< 0.394	< 0.396	1,000,000	2,000	470
Dimethyl phthalate	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
2,4-Dinitrotoluene	< 0.376	< 0.387	< 0.394	< 0.396	8.4	---	0.0008
2,6-Dinitrotoluene	< 0.376	< 0.387	< 0.394	< 0.396	8.4	---	0.0007

TABLE 2 (Continued)
RESULTS OF SOIL SAMPLE ANALYSIS
February 19, 1999 Soil Sampling
Semivolatile Organic Compounds (SW846 Method 8270)

Option Property, 4220 W. 36th Street, Chicago, Illinois
LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample and Depth (feet)				Illinois Remediation Objectives Industrial/Commercial Property		
	SB2	SB4	SB8	SB10			
	2 - 4	2 - 4	10 -11	10- 12	Ingestion	Inhalation	Soil to Groundwater
Di-n-octyl phthalate	< 0.376	< 0.387	< 0.394	< 0.396	4,100	10,000	10,000
Fluoranthene	1.330	< 0.387	< 0.394	< 0.396	82,000	---	4,300
Fluorene	< 0.376	< 0.387	< 0.394	< 0.396	82,000	---	560
Hexachlorobenzene	< 0.376	< 0.387	< 0.394	< 0.396	4	1.8	2
Hexachlorobutadiene	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
Hexachlorocyclopentadiene	< 0.376	< 0.387	< 0.394	< 0.396	14,000	1.1	400
Hexachloroethane	< 0.376	< 0.387	< 0.394	< 0.396	2,000	---	0.5
Indeno(1,2,3-cd)pyrene	< 0.376	< 0.387	< 0.394	< 0.396	8	---	14
Isophorone	< 0.376	< 0.387	< 0.394	< 0.396	410,000	4,600	8
Naphthalene	< 0.376	< 0.387	< 0.394	< 0.396	8,200	---	84
Nitrobenzene	< 0.376	< 0.387	< 0.394	< 0.396	1,000	9.4	0.1
N-Nitrosodimethylamine	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
N-Nitrosodi-n-propylamine	< 0.376	< 0.387	< 0.394	< 0.396	---	---	---
N-Nitrosodiphenylamine	< 0.376	< 0.387	< 0.394	< 0.396	1,200	---	1
Phenanthrene	0.869	< 0.387	< 0.394	< 0.396	---	---	---
Pyrene	1.150	< 0.387	< 0.394	< 0.396	61,000	---	4,200
1,2,4-Trichlorobenzene	< 0.376	< 0.387	< 0.394	< 0.396	2,000	920	5

Remediation objectives are in accordance with the State of Illinois Tiered Approach to Corrective Action Objectives (35 Illinois Administrative Code, Part 742).

Ingestion and inhalation remediation objectives are the most restrictive for the Tier 1 industrial/ commercial or construction worker exposure routes.

Soil to groundwater remediation objectives are for the soil component of the Class I groundwater exposure route.

"<" symbol indicates the compound was not detected above the displayed method detection limit.

"---" symbol indicates that no remediation objective has been established for this exposure route.

TABLE 3
SOIL SAMPLE ANALYTICAL RESULTS
February 19, 1999
Polynuclear Aromatic Hydrocarbon Compounds (SW846 Methods 8310 and 8270)

Option Property, 4220 W. 36th Street, Chicago, Illinois

LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	Sample Number and Depth (feet)										Illinois Remediation Objectives Industrial/Commercial Property		
	SB1 4 - 6	SB2 2 - 4	SB3 9 - 11	SB4 2 - 4	SB5 4 - 6	SB8 10 -11	SB9 5 - 7	SB10 10- 12	SB11 14 - 16	SB12 9 - 11	Ingestion	Inhalation	Soil to Groundwater
Acenaphthene	2	< 0.376	1.1	< 0.387	< 0.024	< 0.394	< 0.69	< 0.396	< 0.029	< 0.024	120,000	---	570
Acenaphthylene	< 0.96	< 0.376	9.7	< 0.387	< 0.024	< 0.394	< 0.69	< 0.396	< 0.029	< 0.024	---	---	---
Anthracene	5.7	< 0.376	3.4	< 0.387	< 0.048	< 0.394	< 1.4	< 0.396	< 0.058	< 0.048	610,000	---	12,000
Benzo(a)anthracene	**8.4**	0.683	**3.2**	< 0.387	0.0089	< 0.394	0.66	< 0.396	0.0095	< 0.0031	8	---	2
Benzo(b)fluoranthene	4.9	0.652	2.4	< 0.387	0.0059	< 0.394	0.54	< 0.396	< 0.0052	< 0.0043	8	---	5
Benzo(k)fluoranthene	3.3	0.621	1.2	< 0.387	< 0.0041	< 0.394	0.45	< 0.396	< 0.0049	< 0.0041	78	---	49
Benzo(a)pyrene	**8.4**	0.631	**3.2**	< 0.387	< 0.0055	< 0.394	0.73	< 0.396	< 0.0067	< 0.0055	0.8	---	8
Benzo(ghi)perylene	5.5	< 0.376	1.7	< 0.387	< 0.048	< 0.394	< 1.4	< 0.396	< 0.058	< 0.048	---	---	---
Chrysene	6.8	0.772	2.1	< 0.387	< 0.04	< 0.394	< 0.9	< 0.396	< 0.04	< 0.04	780	---	160
Dibenzo(a,h)anthracene	0.78	< 0.376	0.33	< 0.387	< 0.007	< 0.394	< 0.2	< 0.396	< 0.009	< 0.007	0.8	---	2
Fluoranthene	20	1.33	9.2	< 0.387	< 0.024	< 0.394	1.2	< 0.396	< 0.029	< 0.024	82,000	---	4,300
Fluorene	2.5	< 0.376	4.3	< 0.387	< 0.024	< 0.394	< 0.69	< 0.396	< 0.029	< 0.024	82,000	---	560
Indeno(1,2,3-cd)pyrene	4.9	< 0.376	1.7	< 0.387	< 0.010	< 0.394	< 0.29	< 0.396	< 0.013	< 0.010	8	---	14
Naphthalene	2.4	< 0.376	**257**	< 0.387	< 0.030	< 0.394	< 0.84	< 0.396	< 0.036	< 0.030	8,200	---	84
Phenanthrene	13	0.869	12	< 0.387	< 0.048	< 0.394	< 1.4	< 0.396	< 0.058	< 0.048	---	---	---
Pyrene	17	1.15	5.3	< 0.387	< 0.024	< 0.394	1.1	< 0.396	< 0.029	< 0.024	61,000	---	4,200

Method 8310 was completed on samples SB1, SB3, SB4, SB9, SB11 and SB12. Method 8270 results are copied from Table 2.

Ingestion and inhalation remediation objectives are the most restrictive for the Tier 1 industrial/commercial or construction worker exposure routes.
Soil to groundwater remediation objectives are for the soil component of the Class I groundwater exposure route.
"<" symbol indicates the compound was not detected above the displayed method detection limit.
"---" symbol indicates that no remediation objective has been established for this exposure route.
Boldface indicates reported concentration is greater than a compound-specific remediation objective.

TABLE 4
RESULTS OF SOIL SAMPLE ANALYSIS
February 19, 1999 Soil Sampling
Polychlorinated Biphenyl Compounds (SW846 Method 8082)

Option Property, 4220 W. 36th Street, Chicago, Illinois

LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

	Sample and Depth (feet)			Illinois Remediation Objectives Industrial/Commercial Property		
	SB1	SB5	SB10			
Aroclors	4 - 6	4 - 6	10- 12	Ingestion	Inhalation	Soil to Groundwater
1016	< 0.060	< 0.060	< 0.060			
1221	< 0.060	< 0.060	< 0.060			
1232	< 0.060	< 0.060	< 0.060			
1242	< 0.060	< 0.060	< 0.060	1	---	---
1248	< 0.060	< 0.060	< 0.060			
1254	< 0.060	< 0.060	< 0.060			
1260	< 0.060	< 0.060	< 0.060			

Remediation objectives are in accordance with the State of Illinois Tiered Approach to Corrective Action Objectives (35 Illinois Administrative Code, Part 742).

Ingestion and inhalation remediation objectives are the most restrictive for the Tier 1 industrial/commercial or construction worker exposure routes.

Soil to groundwater remediation objectives are for the soil component of the Class I groundwater exposure route.

"<" symbol indicates the compound was not detected above the displayed method detection limit.

"---" symbol indicates that no remediation objective has been established for this exposure route.

TABLE 5
RESULTS OF SOIL SAMPLE ANALYSIS
February 19, 1999 Soil Sampling
Inorganic Compounds

Option Property, 4220 W. 36th Street, Chicago, Illinois
LFR 6889.00

All concentrations are reported in milligrams per kilogram (mg/kg)

Compound	SW846 Analytical Method	Sample and Depth (feet)					Illinois Remediation Objectives Industrial/Commercial Property		
		SB1 4 - 6	SB3 9 - 11	SB4 2 - 4	SB5 4 - 6	SB11 14 - 16	Ingestion	Inhalation	Soil to Groundwater
Antimony	6010B	< 30	< 31	< 29	< 30	< 36	82	---	5
Arsenic	7060	4.7	8.8	2.6	5.4	5.5	3	1,200	31
Beryllium	6010B	0.67	0.50	< 0.29	0.62	0.54	1	2,100	8,000
Cadmium	6010B	1.3	< 0.61	0.62	0.92	< 0.73	200	2,800	430
Chromium	6010B	20	15	8	17	16	4,100	420	28
Copper	6010B	191	29	13	23	29	8,200	---	330,000
Cyanide, total	9012A	3.44	0.987	NT	< 0.30	NT	4,100	---	40
Lead	6010B	69	11	< 9.5	23	< 28	400	---	---
Mercury	7471A	0.30	< 0.049	< 0.047	< 0.048	< 0.058	61	52,000	8.0
Nickel	6010B	20	28	9.5	31	26	4,100	21,000	3,800
Selenium	7740	< 0.60	< 0.61	< 0.59	< 0.60	< 0.73	1,000	---	2.4
Silver	7760	< 2.4	< 2.4	< 2.3	< 2.4	< 2.9	1,000		110
Thallium	6010B	< 26	**28**	**61**	**31**	**36**	160	---	3.8
Zinc	6010B	274	48	58	72	80	61,000	---	53,000

Remediation objectives are in accordance with the State of Illinois Tiered Approach to Corrective Action Objectives (35 Illinois Administrative Code, Part 742).

Ingestion and inhalation remediation objectives are the most restrictive for the Tier 1 industrial/commercial or construction worker exposure routes. Ingestion remediation objectives for the soil exposure route are only applicable to the upper 3-feet of soil.

The cyanide remediation objective for the ingestion component of the soil exposure route is for amenable cyanide.

Soil to groundwater remediation objectives are for the soil component of the Class I groundwater exposure route as listed for soil with an acidity of pH 7.75 to 8.0.

"<" symbol indicates the compound was not detected above the displayed method detection limit.

"---" symbol indicates that no remediation objective has been established for this exposure route.

"NT" indicates the compound was not tested.

Boldface values indicate the reported concentration is greater than a compound-specific remediation objective.

March 12, 1999 6889.00
VIA STANDARD OVERNIGHT FEDERAL EXPRESS

Bismarck Brackett
Urban Investment Research Corporation
4201 West 36th Street
Chicago, Illinois 60632

Subject: Preliminary Geotechnical Results: 36th Street Option Property Site Investigation

Dear Mr. Brackett:

LFR Levine· Fricke is pleased to submit to Urban Investment Research Corporation (UIRC) this letter report regarding the Option Property Site Investigation at 4220 West 36th Street, Chicago, Illinois (the "Site). This report provides preliminary geotechnical details for the soil sampling activities completed at the Site on February 19, 1999. Preliminary environmental details were provided to UIRC in our letter report dated March 10, 1999.

This work was conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The observations and conclusions presented in this document are professional opinions based on the scope of activities, work schedule, and information obtained, and has been prepared for the exclusive use of UIRC or its lenders. No representations, express or implied, and no warranty or guarantee is included or intended, including reuse of this document for purposes other than originally intended.

Site Description

The Site is an approximately 5-acre parcel that is fenced and covered with gravel. The Site is currently used to store semi-trailers and intermodal containers. Adjacent land use is predominately commercial/industrial. The Site location is shown in Figure 1.

The Site is a subparcel of a former manufactured gas plant (MGP). Based on information shown in a 1945 drawing of the MGP facility ("Skeleton Map of Crawford Station", January 1945) the Site was predominately occupied by material handling equipment, including railroad tracks and pipe runs. In addition, the following structures are shown on or near the Site:

- Tar Decanter Tank – in the northwestern corner of the Site
- Electrical Substation – on or adjacent (offsite) to the center of the northern Site border
- Ovens – traversing the central part of the Site from the southwestern to northeastern corners of the Site.

The approximate locations of the tar decanter tank and ovens are shown on Figure 2.

Site Investigation

On February 19, 1999 LFR completed a subsurface investigation at the Site. A hollow-stem auger drill rig and soil probe were used to complete 12 soil borings to a maximum depth of 16 feet below ground surface (bgs). Figure 2 shows the soil boring locations.

Standard Penetration Tests (SPT) were completed in five of the soil borings (SB-1 through SB-5). Thin-wall tubes were used to collect undisturbed samples from soil borings SB-1, SB-2, SB-4 and SB-7. These samples were submitted to a geotechnical laboratory for moisture content and plasticity index analysis. However, the samples from SB-1 and SB-2 were predominately granular material that is not suited to plasticity index analysis. A copy of the geotechnical laboratory report is enclosed.

Data Evaluation

At the locations drilled for SB-1 through SB-5 and SB-7, soil conditions consist of a dark brown to black cinder fill underlain by silty clay. The cinder fill extends from the ground surface to approximately 5 to 12 feet bgs and contains from 10 to 40 percent miscellaneous gravel, brick, and glass. Based on SPT blowcounts the fill is medium dense to dense. Based on field observations, the cinder fill has a gradation similar to coarse sand. The cinder fill is underlain by silty clay to the bottom of the borings (12.5 to 15 feet bgs). The silty clay is brown to dark gray in color, medium stiff to stiff in consistency, and exhibits low plasticity. Groundwater was not encountered during this investigation.

Based on the information obtained from the soil borings and laboratory testing and review by a LFR Geotechnical Engineer, spread footing foundations should be suitable for most light to moderately loaded buildings up to three to four stories in height beneath the portion of the Site represented by SB-1 through SB-5. Where spread footings are planned, the following preliminary allowable bearing pressures are provided: 2,000 pounds per square foot (psf) for dead loads, 3,000 psf for dead-plus-live loads, and 4,000 psf for all loads. Use of the existing cinder fill as supporting material would probably require some limited over-excavation and recompaction prior to development.

The geotechnical engineering recommendations presented herein are preliminary and should be supplemented by a final design investigation as development plans are formulated. The preliminary recommendations may be revised depending on the future building types and loading conditions. Future geotechnical investigations should be designed to evaluate soil compressibility and potential settlement from foundation loads and bearing conditions.

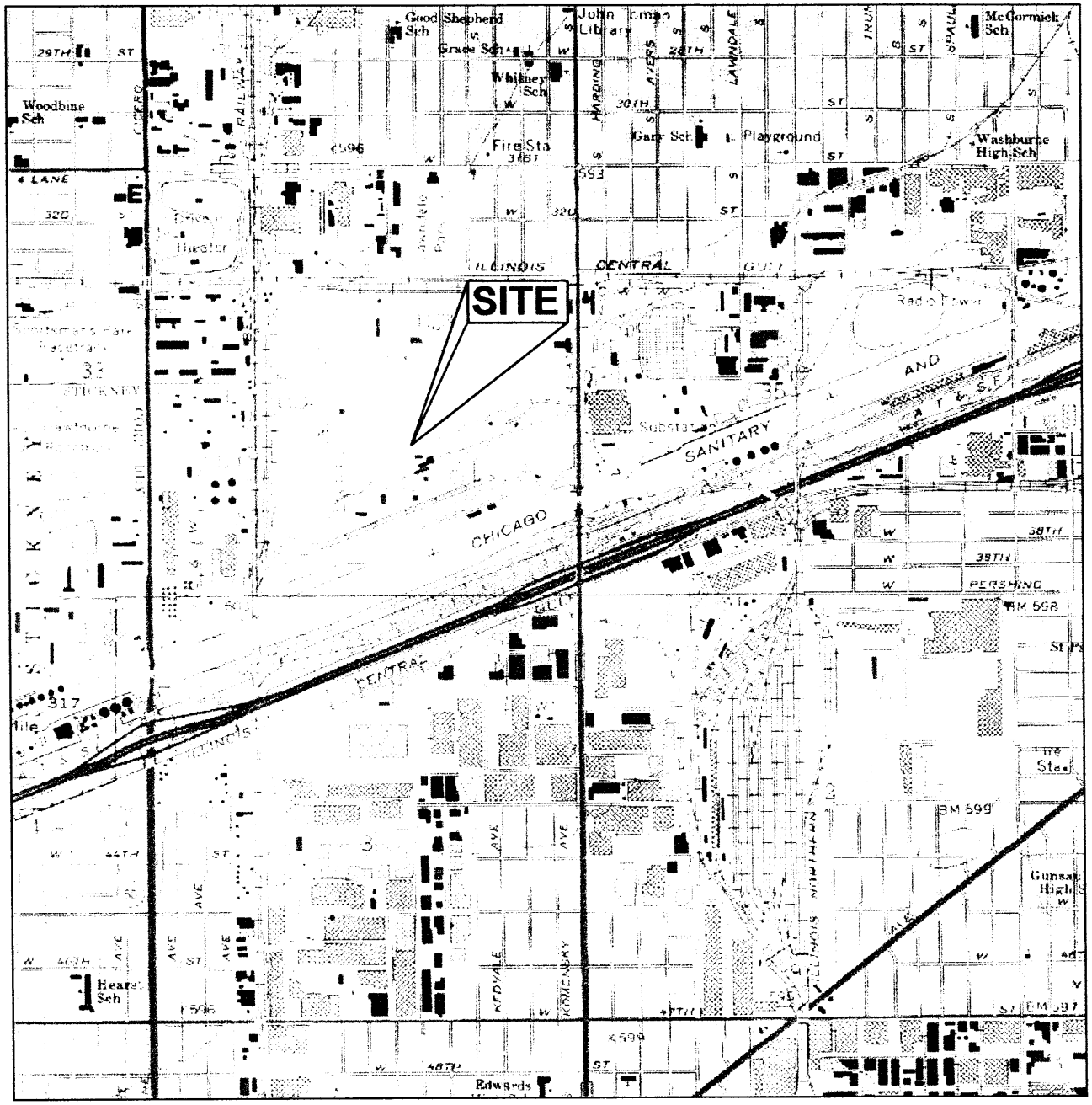
If you have any questions please contact either of the undersigned at (847) 695-8855.

Sincerely,

John P. Chitwood, L.P.G.
Project Geologist

William A. Bow, C.P.G.
Senior Associate Geologist

Enclosures



SITE LOCATION MAP

0 2000 FT.

BASE MAP FROM 1963
PHOTOREVISED 1972 AND 1980
USGS 7.5 MINUTE NW
ENGLEWOOD 15' QUADRANGLE
ENGLEWOOD, ILLINOIS

Urban Research Investment Corporation

Site Location Map
4220 W. 36th Street
Chicago, Illinois

Figure 1
Project No. 6889

6889-01_030299-JPC/ nyk

LFR LEVINE•FRICKE

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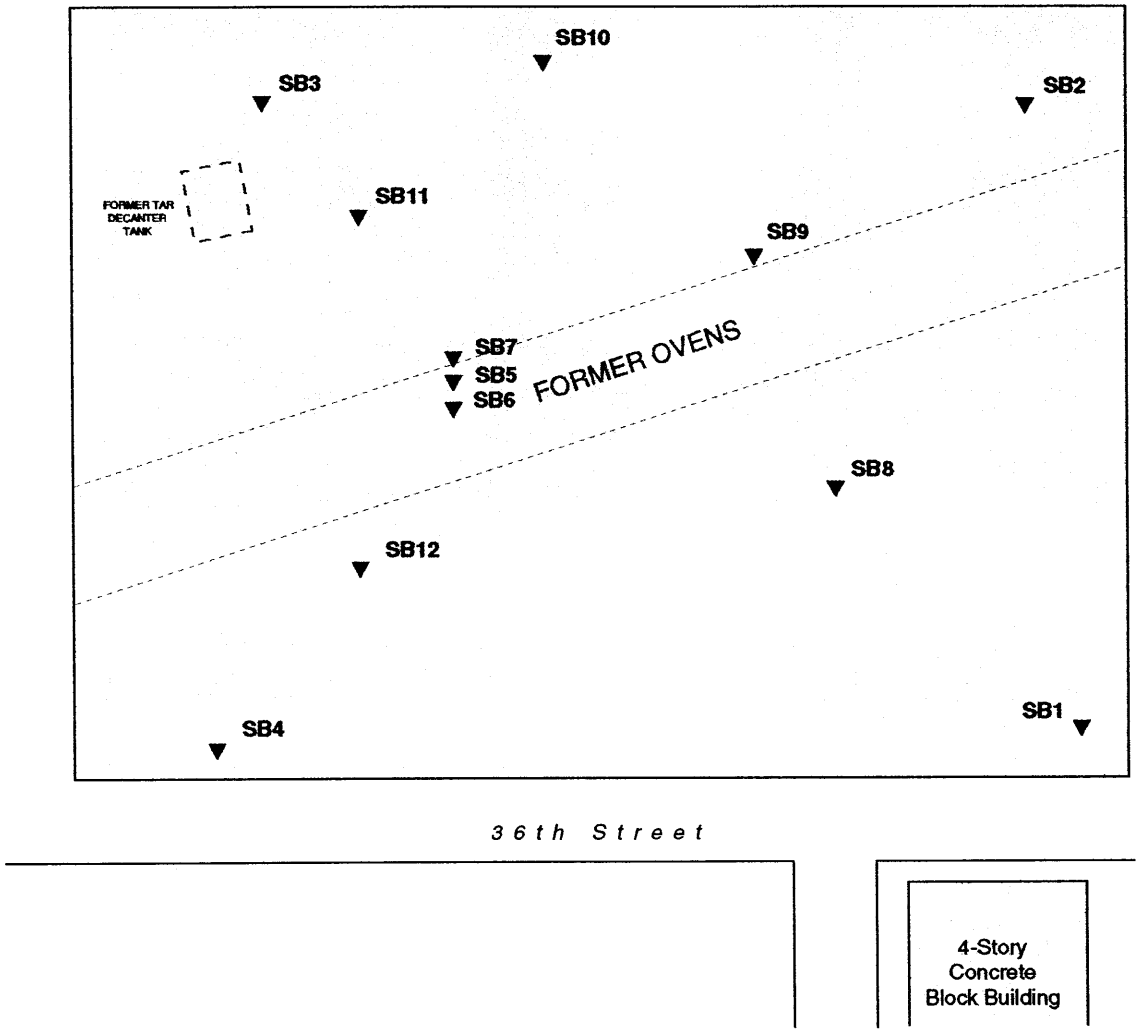

EXPLANATION

- ▼ SOIL BORING (APPROXIMATE LOCATION)
- FORMER STRUCTURE (APPROXIMATE LOCATIONS FROM "SKELETON MAP OF CRAWFORD STATION" THE PEOPLES GAS LIGHT AND COKE CO., JANUARY 1945)

0 100 Feet

Urban Research Investment Corporation

Option Property
4220 W. 36th Street
Chicago, Illinois

Figure 2
Project No. 6889

6889-02_030299JPC, nyk

LFR LEVINE•FRICKE

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Urban Investment Research Corporation
4201 & 4220 West 36th Street
Chicago, Illinois

August 12, 2002

Prepared for:

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A Representative Site Photographs
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EXECUTIVE SUMMARY

Levine-Fricke (LFR) was retained by the Urban Investment Research Corporation (URIC) to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 4201 West 36th Street (the "Campus Site") and 4220 West 36th Street (the "Option Site"), Chicago, Cook County, Illinois (the "Site").

On July 30, 2002, Ms. Mandy Haacker and Ms. Kate Ryan conducted an on-site visual inspection to assess the possible presence of petroleum products and hazardous materials at the Site. The investigation also included a reconnaissance of abutting properties, and background research and review of available local, state and federal regulatory records with regard to the presence of petroleum products and/or hazardous materials.

The Campus Site and the Option Site are located in a heavy industrial zone. All adjacent property is currently and has historically been used for industrial purposes. Based upon the data available to date, the Site was developed prior to 1920 and was a sub parcel for the Peoples Gas Light and Coke facility operating before 1936 to the 1960s. IGT purchased the Campus Site in 1967 and used the Site as a research and development institute. The institute expanded research and constructed several buildings on the Campus Site in the mid 1970s. The Option Site appears to have been vacant from the mid 1960's through the mid-1980s. UIRC purchased the property in 1999 and leases the campus buildings and the Option Site to various tenants.

LFR identified the following recognized environmental condition at this Site:

- The Campus Site and Option Site were historically part of a much larger parcel of land owned and operated by the Peoples Gas, Light, and Coke. Additionally, at the Campus Site, various materials and wastes have historically been stored and used by the various tenants (such as IGT), including coal and coal dust, toluene, spent pot liner, various unspecified solvents, gasoline and fuel oil. While none of these materials have been documented by any regulatory agency to have been released into the soil or groundwater, industrial operations of this type can commonly result in widespread degradation of soil and groundwater quality. Therefore, in an effort to quantify the likelihood of widespread degradation, three subsurface investigations have been conducted by or on behalf of UIRC (two at the Campus Site; one at the Option Site).

The summary and conclusions drawn from the investigations are as follows:

Campus Site Subsurface Investigation (1998)

Soil samples were collected from the Campus Site during two separate subsurface investigations, one on March 5, 1998 (8 locations) and the second on April 2, 1998 (7 locations). In a report dated April 7, 1998 (attached), LFR summarized the results and concluded the following:

- Both subsurface investigations were conducted to determine whether widespread environmental degradation of the subsurface is present at the Site; these studies were not a detailed analysis of every location on the Site that may have been exposed to hazardous materials.
- Soil samples collected during the subsurface investigations were analyzed for the types of compounds that could be expected to be present in the event of a release to the environment, including VOCs, PNAs and selected metals.
- The laboratory results from the March 5, 1998 sampling event show that no organic compounds were detected at concentrations above Tier 1 Industrial/Commercial Cleanup Objectives as specified in 35 Illinois Administrative Code Part 742. Naturally occurring metals were detected in site soils; however, none were detected at concentrations exceeding their current respective state cleanup levels.
- The laboratory results from the April 2, 1998 sampling event show that, although PNAs were detected in the soil samples, none were present above the Construction Worker standards as referenced in the TACO regulations.
- Based upon the laboratory reports, there does not appear to be site-wide environmental degradation of the soil at concentrations exceeding Illinois cleanup levels. Therefore, based upon the information reviewed, no additional expenditures for environmental investigations or any expenditures for environmental remediation are anticipated at this time.
- Based upon the number of soil samples collected (15 locations within a 9.7 acre site), LFR cannot determine whether isolated areas of contamination currently exist, and if present, the resultant cost to remedy the problem. Furthermore, tenant actions may, in the future, result in an unintended release of hazardous materials to the environment. However, in either case, the Illinois Tiered Approach to Corrective Action Objectives (TACO) regulations can be used to determine whether a significant clean-up will be required, or, based upon the potential risk to human health and the environment, the material can be left in place without incurring significant cost. In part, the TACO regulations were created to minimize unnecessary and costly remedial actions that would demonstrate minimal benefit to the protection of human health and the environment.

Based upon the data collected during this Phase I ESA, the above conclusions reached in 1998 are still applicable to the Campus Site. Additionally, this Site is part of the larger facility enrolled by Peoples Gas and Light in the Illinois Site Remediation Program.

Option Site Subsurface Investigation (1999)

Soil samples were collected from 12 soil borings on the Option Site on February 19, 1999. In a report dated March 10, 1999 (attached), LFR presented the following:

- In general, soil borings encountered 5 to 14 feet of fill material below the ground surface. The fill material included various amounts of gravel, sand, silt, clay, cinders, brick, glass and miscellaneous debris. Below the fill was stiff clay that appears to be native glacial till.

Soil boring SB3 (northwest corner of the site) encountered oil/tar-coated soil from approximately 9 feet bgs to termination at 15 feet bgs. Groundwater was not encountered during this investigation.

- Remediation objectives for the soil ingestion exposure route are applicable to the upper 3 feet of soil. No chemicals or metals were detected in this interval at a concentration greater than their respective remediation objective for this exposure route.
- Remediation objectives for the soil inhalation exposure route are applicable to the upper 10 feet of soil or within 10 feet of any manmade pathway (e.g., sewers and basements). Benzene and Toluene were detected at concentrations of 31.8 and 44 milligrams per kilogram (mg/kg), respectively, in a sample collected from soil boring SB3 at 9 to 11 feet bgs. The Benzene and Toluene remediation objectives for this exposure route are 1.5 and 42 mg/kg, respectively. No metals or other chemicals were detected at a concentration greater than their respective remediation objective for this route.
- Groundwater was not encountered during the investigation. However, several compounds were detected above their Tier 1 migration to groundwater objectives. Tier 2 objectives have not been calculated. However, given the prohibition on groundwater for potable use in the City of Chicago, this exposure route is not likely to be of significant concern.
- The presence of tar-coated sand in soil boring SB3 is likely the result of the historical use of the property by Peoples Gas, Light, and Coke (Peoples). Peoples Gas and Light has contacted several property owners in the area, including UIRC, for the purpose of conducting a subsurface investigation pursuant to their recent enrollment of their former facility into the Illinois Site Remediation Program (#0316580022).

Based upon current use of the Option Site for storage of intermodal containers, no change in the Site conditions would be expected. Additionally, this Site is part of the larger facility enrolled by Peoples Gas and Light in the Illinois Site Remediation Program.

In conclusion, both the Campus Site and Option Site are located within a section of Chicago that has historically been utilized for industrial purposes. Due to the specific history of these Sites, three subsurface investigations were conducted on behalf of UIRC. The results of both investigations were consistent with the historical use. However, with the possible exception of the oil-coated sand noted on the Option Site, neither investigation revealed impacts requiring significant remediation. By enrolling the Site in the Illinois Site Remediation Program, Peoples Gas and Light has acknowledged their responsibility to assess and if necessary, remediate impacts from their historical operations. It is presumed that the oil-coated sand on the Option Site is the result of their operations. Finally, there is no evidence that current operations at the Site have had any negative impacts to the subsurface.

1.0 INTRODUCTION

Levine-Fricke (LFR) was retained by the Urban Investment Research Corporation (UIRC) to conduct a Phase I Environmental Site Assessment (ESA) and summary of existing documents for the properties located at 4201 West 36th Street ("Campus Site") and 4220 West 36th Street (" Option Site") Chicago, Illinois. The following scope of work was performed by LFR as part of this assessment:

- A review of background information on setting and historical use of the Site;
- Site reconnaissance;
- A review of regulatory records concerning the Site and surrounding areas;
- A review of existing environmental reports for the property; and
- Data evaluation and report preparation.

On July 30, 2002, Ms. Mandy Haacker, design engineer and Ms. Kate Ryan, environmental scientist for LFR, conducted a walk-through reconnaissance-level inspection of the site to observe general site conditions and indications of the possible release(s) of hazardous materials and/or petroleum products to the subsurface. Ms. Haacker and Ms. Ryan interviewed, and were escorted throughout the site by Mr. Eric Warden, Property Manager for Urban Investment Research Corporation (UIRC). Information and observations from the interview and site reconnaissance are presented in Section 2 of this report. Representative photographs of the Site are presented in **Appendix A**.

2.0 SUBJECT SITE

The site is comprised of two parcels; approximately 9.7 acres of land located on the west side of Pulaski Road and approximately 5 acres of land located on the east side of Pulaski Road, Cook County, Illinois. The parcels are irregular in shape and improved with numerous buildings.

The site property located at 4201 W. 36th Street, called the "campus" contains 20 research, storage, maintenance, small office and processing centers, and one 38,000 square foot, four story office building (See **Table 1** for building descriptions). UIRC owns the property and leases the subject site to eight different entities.

The Site property located at 4220 West 36th Street, known as the "Option Site" and is leased to CMI Trucking for the storage of intermodal containers and truck parking.

The two parcels are located in a heavy industrial and commercial area of Chicago along the Chicago Sanitary & Ship Canal corridor. The UIRC facility is located in a complex

consisting of trucking terminals, warehousing, and distribution facilities that occupy the large tract of land formerly occupied by the Peoples Gas, Light and Coke, Crawford Coal Gasification Plant. This tract of land covers approximately 300 acres and extends from 33rd Street south to the Sanitary and Ship Canal and from Pulaski Road (Crawford Avenue) west to a heavy industrial corridor along Cicero Avenue. Petroleum refineries and distribution facilities are located along the Sanitary and Ship Canal and the Metropolitan Water Reclamation District of Greater Chicago Water Treatment/Reclamation Plant and sludge beds are located to the southwest of the area. There is no residential property within one half mile of the Site.

Based on the review of historical maps, the Peoples Gas Light and Coke facility operated from before 1936 to the 1960's. According to EPI's Phase I dated February 23, 1998, title search documents identify that the Site was acquired by IGT in 1967 and research development activities of the institute began in one of the buildings on the campus property in 1973, peaking around 1980. The institute expanded research and constructed the majority of the buildings on the property, including the Hygas Pilot Plant that has since been dismantled. The IGT facility is located within the south central portion of former Peoples Gas Light and Coke complex facility in an area that was largely undeveloped vacant land with a portion of the coal handling and processing equipment along the west and northwest property boundaries. No tar tanks, gasholders, oil tanks, purifiers, nor coke batteries were identified as having been located on the Campus Site. Copies of all previous investigation are located in Appendix F.

2.1 Site Location, Property Identification Number, and Zoning

The subject property is located at 4201 and 4220 West 36th Street, Chicago, Cook County, Illinois. Figure 1 shows the location of the site. The parcel identification number is 36-420-7053.

The property is zoned "M3-3" - Heavy Manufacturing District.

2.2 Site and Vicinity Characteristics

The Campus Site consists of 9.7 acres of land improved with 20 research, storage, maintenance, production and office buildings. UIRC leases to 8 tenants at the Campus Site. The Option Site is a 5-acre parcel of land that is fenced in and covered with gravel/crushed limestone. Currently the Option Site is leased to CMI Trucking stores semi-trailers and intermodal containers. Both sites are located in a tract of heavily developed industrial property.

Adjoining properties include Peoples Gas to the east, a semi-trailer and intermodal container storage facility north, northwest, petroleum refineries, and distribution facilities located along the Chicago Sanitary and Ship Canal. The Metropolitan Water Reclamation District of Greater Chicago water treatment/reclamation plant and sludge

beds are located southwest of the area. No residential property is within ½ mile of the sites.

The topography of the site is relatively flat. The land slopes slightly to the south.

2.3 Site Development

The 4201 Site is improved with 20 large buildings, described in detail below and itemized in **Table 1**. Surface water runs into catch basins located throughout the property. These catch basins are part of a stormwater collection system that runs under the property and outfalls to the Chicago Sanitary and Ship Canal. The option property consists of crushed limestone/asphalt paving with intermodal containers stored on the site. Along the southeast corner of the Option Site is semi-truck parking. No stormwater basins were located on the option property. **Figure 2** is a site plan for both parcels of land.

2.3.1 Site Description

2.3.1.1 Building Descriptions

Multi-Tenant - Building #43

Building #43, known as the UIRC Campus Building is a four story brick building constructed in the late 1990's. During the Site inspection on July 31, 2002, seven different businesses are tenants of the Campus building. Concentra Medical is a medical center/office that does limited testing. All samples collected are directly shipped offsite for processing. Angel Logistics Trucking, Orkin, Pacer Trucking Company, and UIRC have offices inside the Campus building. Ficht Commercial Cleaning maintains an office and general household cleaning supplies within the Campus building. PSRI maintains an office and laboratory inside the Campus building. The general construction of the building is brick walls with drywall finishing, steel reinforced concrete slab floor and a flat concrete roof. The campus building is illuminated with fluorescent lighting, and carpet flooring with the exception of ½ of the third floor and the entire fourth floor, which are vacant and unfinished. No chemicals or hazardous material were observed within the Campus building during the Site walk on July 31, 2002.

Security Post - Building #31

The guardhouse was constructed in 1974 of concrete blocks. This building is used for security purposes and did not contain any hazardous materials.

Superior Graphite – Buildings # 20, 25, 28, 29, 30, 32, 34, 35, 38, and 50

Superior Graphite is the largest tenant at the Campus Site property located at 4201 W. 36th Street. Superior Graphite uses several buildings at the site in the manufacturing, storage, and distribution of graphite.

Building #30, built in 1973 with a slab on grade concrete foundation with metal paneling walls, is Superior Graphite's main production facility. Within the facility are hundreds of 55-gallon drums containing raw graphite, and pallets containing bagged raw graphite. Several hoods and boilers are used in the production area to heat and process the graphite. Two propane driven fork trucks were in operation during the Site walk. The building was illuminated with incandescent lighting. The general house keeping practices within Building #30 were good.

Building 50 was constructed in the late 1990s. Constructed of a concrete poured slab foundation and brick walls, this building is Superior Graphite's production building #2, and the main warehouse and distribution center. Hundreds of 55-gallon drums containing processed graphite are stored on pallets. An office is located along the northwest corner. The interior warehouse and production floor are illuminated by incandescent lighting, while the office has fluorescent lights. The office has concrete flooring and acoustical ceiling tile.

Buildings #28, 29, 32 and 34 were all constructed in 1973. Buildings #28 and 29 are constructed of metal paneling, while Buildings #32 and 34 are concrete block. Superior Graphite uses each of these buildings for warehousing of raw and finished product.

Building #25 was constructed in 1966 on a concrete block and is a brick one-story building. Superior Graphite stores finished product within this building. This area was well maintained and no hazardous materials were observed. The western portion of this building is also used by Sparkle Car Wash as a storage area for car and truck cleaning activities.

Building #35 was constructed in 1973. This building is a firewater pump house that was not inspected during the Site investigation on July 31, 2002.

Building #38 was constructed in 1975, with a concrete poured slab on grade and concrete block walls. This building is used for general warehousing of raw product (55-gallon drums of graphite) by Superior Graphite.

Building #20 was initially built in 1955 with an addition completed in 1973. This building has a concrete poured slab on grade foundation and metal paneling for walls. Superior Graphite uses this building for production. Heating chambers, hoods, and boilers were observed in operation. Several bags of raw graphite were stockpiled along the north wall. This building is illuminated with incandescent lighting. No hazardous materials were observed during the site walk.

CMI Freight Transit, Inc. – Buildings # 15 and 48

Buildings #15 and 48 were constructed in the late 1990's. Building #15 is an office used by CMI. The building is one story, built on a concrete slab with aluminum siding. There were no observed hazardous materials within this building. Flooring within the office is 2x2 inch ceramic tiling and the ceiling had 2x4 feet acoustical ceiling tile.

Building #48 is a warehouse and distribution center for CMI. The building is constructed of concrete slab on grade with floor drains connected to the stormwater drains located on site, which empty into the Chicago Sanitary and Ship Canal. During the site visit CMI was warehousing metal piping. There were no observed hazardous materials within the building.

PSRI Testing – Building #46

PSRI is a research and development company that creates pilot studies for silica uses. The main research area takes place in building #46, which is 14 stories and was constructed in 1981-1982 with metal panel/steel frame and concrete poured flooring. The building is designed with grated floors along the edges of the building, with the center portion of the building housing large pipes associated with production. On the different levels, 55-gallon drums containing various raw products are stored for immediate usage. Several hoods and chambers were observed, as well as welding equipment. Hydraulic oil is used in the maintenance of the equipment within this building.

The exterior surrounding area of Building #46 stores raw product (16 skids of sand, 26 55-gallon drums containing polypropylene) and combustible gases (argon, oxygen, and acetylene) located along the east and south walls. The area was well maintained and all combustible gases were locked in security cages. North of Building #46 is a 200-gallon above ground storage tank (AST) used by PRSI. The AST was in good condition and contained gasoline. Directly southeast of Building #46 is a 1000-gallon liquid air AST used by PSRI. This AST was double contained and well maintained. South of Building #46 is the storage location of empty 55-gallon drums used in shipping.

Building #25 was constructed in 1966 of concrete block with a concrete slab on grade foundation. PSRI uses this building for combustion, testing, and storage. PSRI stores several 55-gallon drums of silica/sand within this building.

Multi-Tenant Building # 21

Building #21 is a five story brick building constructed in 1920 and is used by PSRI, which stores raw product in the eastern portion of the building. This building was historically used for process development and contained four burn reactors. No evidence of this historical work was observed during the July 30, 2002 site inspection.

CIT Building #22

CIT, a subsidiary of AT & T, uses this building as an office area and a storage facility for telecommunication activities. During the site inspection, there were no observed hazardous materials.

Vacant Building #36

Building #36 was formerly used by GTI as part of the research and development for alternative energy during the 1980's. GTI still stores old machinery within building #36, but plans are underway for the dismantling and demolition of this building.

No buildings are located on the Option Site.

2.3.1.2 Outside Areas & Miscellaneous Structures

Several large pieces of machinery and outdated equipment are located across the Campus Site. Most of these odd pieces are associated with the former Urban Redevelopment & Alternative Energy Research completed at the Site. During the Site walk, a large oven kiln was located south of Building #20. Located all around Building #36 are old equipment, scrap metal and debris.

North of building #21 is a container storage bin operated by Orkin. Orkin stores chemicals associated with extermination inside the container. The container bin was locked and appeared well maintained.

Southwest of Building #22 was 12 55-gallon drums reportedly containing used hydraulic oil from elevators located at the site. Six of the drums appeared empty, and six appeared to be full of product. The drums were sealed and in fair condition. The drums were located on grass/gravel and not labeled.

2.3.2 Source of Potable Water

The City of Chicago provides potable water to the site. The City obtains its drinking water supply mainly from Lake Michigan. The City's water reportedly complies with all state and federal standards specified by the Safe Drinking Water Act.

2.3.3 Wastewater Disposal System

There are no industrial or process wastewater discharges associated with the subject property, and former discharges were reported to consist of regular domestic sanitary discharges only.

2.3.4 Solid Waste Disposal

Several trash dumpsters are located at the site. A general waste contractor, Waste Management, removes the general refuse and the cardboard recycling on a regular basis.

2.3.5 Heating and Cooling Systems

Commonwealth Edison (ComEd) supplies electricity to the Site, and Nicor supplies natural gas for the Site. Forced air central units are located on the roof of Building #43, the Campus Building, and #15, an office building for CMI Trucking. No other building located on the Site has air conditioning.

2.4 Property Use

2.4.1 Current Property Use

The Campus Site is currently operated as an industrial park with various tenants. The option property is used as a semi-trailer truck and intermodal storage container facility.

2.4.2 Former Property Use

Information from historic aerial photographs, Sanborn Maps, and site interviews indicate that Peoples Gas Light and Coke facility operated on the Site from before 1936 to the 1960's. According to EPI's Phase I dated February 23, 1998, title search documents identify that the Site was acquired by IGT in 1967 and research development activities of the institute began in one of the buildings on the campus property in 1973, peaking around 1980. The institute expanded research and constructed the majority of the buildings on the property, including the Hygas Pilot Plant that has since been dismantled. The IGT facility was located within the south central portion of former Peoples Gas Light and Coke complex facility in an area that was largely undeveloped vacant land with a portion of the coal handling and processing equipment along the west and northwest property boundaries. No tar tanks, gasholders, oil tanks, purifiers, nor coke batteries were identified as having been located on the Campus Site.

The Option Site is also a sub parcel of the Peoples Gas Light and Coke facility. The Option Site was predominately occupied by materials handling equipment, including railroad tracks and pipelines. On or near the Option Site included a tar decanter tank, an electrical substation and ovens.

2.4.2.1 Sanborn Fire Insurance Maps

LFR ordered Sanborn Fire Insurance Maps from Environmental Data Resources, Inc. (EDR). Maps were obtained for the following years: 1936, 1951, 1975, 1987, 1991, and 1993. Copies of the Sanborn Maps are included in **Appendix B**. LFR also reviewed Environmental Protection Industries' (EPI) *Phase I Environmental Assessment on a site located at 4201 W. 36th Street, Chicago, Illinois* (Campus Site). Below are descriptions of Sanborn maps reviewed from the EPI Phase I and from EDR. Copies of all previous reports are located in **Appendix F**.

According to the Phase I completed by EPI, "the 1936 map shows the subject property to be included within The Chicago By-Products Coke Company facility. The subject property is located on the southern portion of this site and is developed with several buildings and structures. The western portion of the subject property is developed with a coal conveyer system. The northwest corner of the property is mapped with a "Re-Screening Tower" and the buildings located south along the west property border are mapped as "Crane House," "Mixer House" and "Breaker Building." These buildings are connected with a series of several coal conveyer systems. There is a Calcium Chloride elevated aboveground storage tank and a "Change House" mapped directly south of the Re-Screening House building. The area directly east of the coal conveyer system, located in the southwest corner of the property, is mapped with a "Transformer Station" building. The coal conveyers extending east are connected to the "Producer House" and "Booster House" (currently known as Building 21 and 22). There are two "Capolas" mapped directly north of the Producer House. There are several railroad spur lines extending in the southwest to northeast trending direction, south of the Producer House. According to information supplied by the IEPA and the Office of Coal Development and Marketing, the Producer House and Booster House were used to generate gas for use in the coke ovens at the facility.

The portion of the Chicago By-Products Coke Company facility north of the subject property is more densely developed with conveyer systems, buildings, reservoirs, and aboveground storage tanks. The area north of the northwest portion of the subject property is mapped with four Calcium Chloride Tanks and a Coke Treatment House. The conveyer system that extends north from the subject site property Re-Screening House is connected to a series of buildings and conveyer systems. This area of the site is mapped as the "Coke Plant." The first set of conveyers and buildings are mapped as a "Coke Crusher" building and a "Coke Warf" building. The series of buildings directly north of the previously identified buildings are mapped as "Battery Coke Ovens #3," "Coal Hopper," "Reversing Room," "Battery Coke Oven #2," and "Battery Coke Oven A." The area east of the coke ovens is mapped as a "Quenching Station" with structures mapped as "reservoir and spray." Additionally, there is a "Fuel Gas Holder Tank' mapped in this area. The area further east is mapped with six "Iron Purifying Tanks in Concrete Walls." The area further north of the identified "Coke Plant' is mapped as the "Water Gas Plant." This area is mapped with an "Electrical Substation" with three "Primary Cooling Tanks," a "Sulfate Storage" and "By-Product Building,"

and two "50,000-gallon Acid Tanks" on a 33-foot tower. North of the mapped acid tanks is the West Fork of the South Branch of the Chicago River. The area north of the river is mapped with a "Boiler House" building, an "Agitating Tank' "Generator House," "Blower Room," "Liquid Circulating Tanks," "Naphthalene Scrubber," three buried oil tanks and a "Light oil building." The area west of the subject property is mapped as the "coal storage yard." The area south of the subject property is not mapped."

1951: The 1951 map shows the subject property to be similar to the previous map. However, the previous identified "Producer House" and "Booster House" is now mapped as "Illinois Institute Technology Research Building."

1975: The 1975 map shows the subject property to be completely redeveloped. The western half of the site is mapped as the "Gas Institute U," and the eastern half of the site is mapped as the "Brocon Inc., Coal Hydro-Gasification Pilot Plant." The buildings directly north and south of the previously identified buildings (Booster and Producer House buildings) on the western portion of the site are concrete block construction, built in 1974. These buildings appear similar to Building 25 and Building 20. Additionally, there is a brick building located centrally along the south property boundary. The eastern portion of the subject property is mapped as the "Brocon Inc., Coal Hydro-Gasification Pilot Plant." This property is developed with eight industrial buildings, and includes areas mapped as "coal piles", "hydro-gasification area", and a "coal conveyer system."

The property east of the subject property is developed with a single-story, iron building. The area further southeast of the subject property, across the railroad tracks, is mapped with "20 propane tanks" and "14 butane tanks" buried in the ground. The area south of the subject property is mapped with railroad tracks. The area further south is occupied by the Chicago Sanitary and Ship Canal. The property west of the subject property is developed with a rectangular building mapped as "Transportation." The property further west is mapped as the "Burlington Truck Lines." The area north of the subject property is undeveloped.

1987: The 1987 map shows the western portion of the subject property to be developed with four additional buildings. The building located at the northeast corner of the property is a four-story building built in 1979. This building appears similar in location and construction to the office building noted during the site investigation (Building 43). Three other buildings are located in the southwest corner of the property and appear similar to Buildings 28, 34, and 29. The surrounding properties appear similar to the previous map.

1989: The 1989 map does not show any differences from the 1987 map.

1992: The 1992 map is unchanged from the 1987 and 1989 maps with the exception of a name change. The Site referred to as The Gas Institute is now called the Department of Energy Gas Institute U.

2.4.2.2 Aerial Photographs

Aerial photographs were obtained from EDR for the years 1951, 1963, 1972, 1988, and 1994. **Appendix C** presents copies of the aerial photographs.

According to the Phase I completed by EPI, the **1951** aerial photograph shows "the subject property to be a portion of a larger parcel of land known to be operated by the Peoples Gas, Light and Coke Company, Coal Gasification Plant. The subject property is centrally located along the southern boundary of the site and is developed with several structures. The western portion of the subject site property is developed with a conveyer system that extends in a north to south direction. There are several buildings located along this conveyer system. The south subject property boundary is occupied by several railroad spurs. Centrally located along the north property boundary are two industrial buildings that appear similar in construction and location to Buildings 21 and 22, noted during the site investigation. The remaining eastern and southeastern portions of the property are undeveloped.

The area east of the subject property is undeveloped land. The area further east, approximately 1,000 feet is occupied by two large gasholders, aboveground tanks. The area south of the subject property is covered with what appears to be coal piles. The area west of the subject property is also used for coal storage. The conveyer system noted on the subject property continues to the north were the majority of the Peoples Gas Coal Gasification Plant is located. This area is developed with several large industrial buildings, many small industrial buildings, approximately 11 aboveground storage tanks of various sizes, coal piles and areas of distributed soil."

The **1963** aerial photograph shows the subject property still part of the larger parcel operated by the Peoples Gas, Light and Coke Company. The adjacent property appears to be in the process of demolition. Several buildings located northwest of the Site in the 1951 photograph are now vacant.

The **1972** aerial photograph shows the Site is subdivided from Peoples Gas and has the following buildings constructed: # 7, 11, 14, 19, 20, 21, 22, and 25. The option property is vacant and appears to have vegetation growing. The adjoining property to the east and south appears vacant with vegetation growing. Property west of the Site is developed into an industrial facility with several trucks and trailers located on the property.

The **1988** aerial photograph shows the Site very similar to current conditions. The Site has the following buildings located on the site: 7, 11, 14, 15, 19, 20, 21, 22, 24, 25,

28, 29, 30, 31, 32, 34, 35, 36, 38, 41, 43, 46, and 47. The crushed limestone driveways can also be seen in the photograph. The option property remains undeveloped with vegetation growing. All adjacent property to the Site is developed for industrial use. To the west is the Peoples Gas plant, south is the Chicago Sanitary and Ship Canal and west is a trucking and trailer parking lot.

The **1993** aerial photograph shows the Site unchanged from the 1988 aerial photograph. The Option Site has what appears to be semi trailer containers stacked at the site. Adjoining property to the north, west and northeast also appear to have semi-truck trailers/intermodal containers stockpiled on their property. The adjoining property to the west is the Peoples Gas facility.

2.5 Current and Historical Regulatory Review

Current and historical regulatory information pertaining to the site was obtained from an environmental database search of local, state, and federal listings, selected environmental regulatory agency records, and building permits, as described below.

2.5.1 Environmental Database Report

An environmental database report was obtained from EDR, which compiles its information from a database of local, state, and federal agency lists. The site is listed in the UST and the Resource Conservation and Recovery Information System (RCRIS), and Facility Index System (FINDS) databases. **Appendix D** contains a copy of the EDR report.

2.5.2 Regulatory Records

2.5.2.1 City of Chicago

Site records, such as building permits, were obtained from the City of Chicago Department of Building and Zoning. Several permit applications were obtained for work completed at the Site since 1980. Only one violation was on record for electrical work completed at the UIRC Campus building without a permit.

2.5.2.2 State Environmental Records

Freedom of Information Act (FOIA) requests regarding hazardous materials handling, incidents, or spills, or the presence of USTs at the Site were sent to the Office of the State Fire Marshal (OSFM), Illinois Environmental Protection Agency (IEPA), and the IEMA. The Bureau of Air and Water did not have any records on either site. The OFSM had no records for the Option Site, but did have a report documenting the removal of two underground storage tanks (USTs) removed from the Campus Site in

1991. One 6,000 gasoline UST and one 5,300 gallon fuel oil tank were removed without incident by RW Collins on December 2, 1991. At the time of reporting, the IEMA and Bureau of Land have not responded to the FOIA request. All information obtained will be forwarded to UIRC. Copies of the FOIA request and state agency responses are located in **Appendix E**.

2.6 Other Regulatory Issues – Site Specific

2.6.1 Radon

Sampling for radon gas was not conducted at the Site during this assessment.

2.6.2 Asbestos-Containing Building Materials

A sampling survey for asbestos-containing material (ACM) was not performed as part of this scope of work. Due to the ages of the buildings (early 1920s through the 1970s), it is possible that they contain ACM.

2.6.3 Lead Based Paint

Testing for lead-based paint was not performed for this assessment. Due to the ages of the buildings (early 1920s through the 1970s), it is possible that they contain lead based paint.

2.8 Geology

2.8.1 Surface Features

According to the United States Department of the Interior Geological Survey (USGS) Topographic Quadrangle of Englewood, Illinois, Cook County, dated 1993, the elevation of the Site is approximately 595 feet above mean sea level based on the 1929 National Geodetic Vertical Datum.

The topography of the Site is relatively flat. The land slopes slightly to the south.

2.8.2 Subsurface Features

According to the U. S. Department of Agriculture Soil Conservation Service's Soil Survey of DuPage and part of Cook Counties, Illinois, 1979, the soil in the vicinity of the site consists of the Urban land-Milford soils. These soils are characterized as: "built-up areas and deep, nearly level, poorly drained soils that have a silty and clayey subsoil; formed in glacial lake sediment."

2.9 Hydrology

2.9.1 Surface Water

Surface water runs into catch basins located throughout the property. These catch basins are part of a stormwater collection system that runs under the property and outfalls to the Chicago Sanitary and Ship Canal.

According to the Federal Emergency Management Agency (FEMA) the Site and immediate vicinity are located within Zone C, an area of minimal flooding.

According to the National Wetlands Inventory Maps of the area, the subject property is not located within a designated wetland. The nearest mapped wetlands are located adjacent to the north of the property, across West 36th Street.

2.9.2 Ground Water

Site-specific groundwater data was not obtained by LFR, however, the Chicago Sanitary and Ship Canal is approximately 60 feet south of the site and groundwater is presumed to flow in this direction.

3.0 SURROUNDING PROPERTIES

3.1 Description

Land use in the immediate vicinity of the site is industrial.

3.1.1 Historical Use

Historically, the land surrounding the Site was used for heavy industrial proposes from as early as the 1930's. According to historic maps, aerial photographs and Site interviews, Peoples Gas owned the Site and the immediate vicinity. The Site and surrounding property was part of the large Peoples Gas, Light and Coke facility until the 1960s. The surrounding properties developed into smaller parcels of industrial facilities.

3.1.2 Current Use

The surrounding area is currently used for industrial purposes. At the time of LFR's investigation, the site was bordered to the north, northwest and northeast by motor freight companies. To the south of the Site are railroad spurs and the Chicago Sanitary and Ship Canal. The Site is bordered to the east by a large metal industrial building occupied by Peoples Gas and further to the east is a ComEd substation. West of the Site is Nationway Terminal motor freight company used for the storage of trucks and trailers.

3.2 Regulatory Records Review

An environmental database report prepared by EDR was reviewed for local, state, and federal listings for properties within the Site area. The EDR report is included as Appendix D.

EDR did not identify properties within the ASTM-specified radius of the Site for the following databases:

National Priorities List Sites (NPL), including delisted/proposed NPL sites

Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP)

Resource Conservation and Recovery Act Corrective Action Report (CORRACTS)

RCRIS – Treatment Storage and Disposal Facilities Not Subject to Corrective Action (RCRIS-TSD)

RCRIS-Large Quantity Generator (LQG)

Emergency Response Notification System (ERNS)

State Landfill

Superfund consent decrees (CONSENT)

Records of Decision for NPL Sites (ROD)

Facility Index System (FINDS)

Hazardous Materials Information Reporting System (HMIRS)

Material Licensing Tracking System (MLTS)

Mines Master Index File (MINES)

NPL Liens

PCB Activity Database System (PADS)

RCRA Administrative Action Tracking System (RAATS)

Toxic Chemical Release Inventory System (TRIS)

Toxic Substance Control Act (TSCA)

Fifra/TSCA Tracking System (FTTS)

Northeastern Illinois Planning Commission Solid Waste Landfill Inventory (NIPC)

Category List (CAT)

Former Manufactured Gas Sites (Coal Gas)

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

CERCLIS contains data on potentially hazardous waste sites that have been reported to the United States Environmental Protection Agency (USEPA). These sites are either

proposed to or on the NPL and sites, which are in the screening and assessment phase for possible inclusion on the NPL. There is one facilities listed in the CERCLIS database: Double A Metals Inc. (3321 S. Pulaski Road). Based on the location, located 1/4 -1/2 mile northeast of the site, it is not likely that it has adversely impacted the site.

Resource Conservation and Recovery Information System (RCRIS)

The RCRIS database was created by the U.S. EPA to maintain and regulate facilities that handle hazardous waste. There are four RCRIS-small quantity generators (SQG) (generating less than 1,000 kilograms of hazardous waste per month) within 1/4 mile of the site: Institute of Gas Technology (4201 West 36th Street (site)), Dongary Investments Inc. (4300 W. 35th Place), Vitran Express (4200 W. 35th Place), and Nations Way Transport (4359 W. 36th Street). No violations have been reported for any of the above facilities. Based on the location (located east of the site), potential releases of hazardous substances would be minimal. No other RCRIS-SQG sites were identified within the standard ASTM search distance around the site.

Resource Conservation and Recovery Information System (RCRIS)

The RCRIS database was created by the U.S. EPA to maintain and regulate facilities that handle hazardous waste. There is one RCRIS-large quantity generator (LQG) (generating more than 1,000 kilograms of hazardous waste per month) within 1/4 mile of the site: Crawford Station (4161 West 36th Street). No violations have been reported for the above facility. Based on the inferred south-southeast direction of groundwater flow across the site area, potential releases of hazardous substances from the listed facility could adversely impact the site. No other RCRIS-LQG sites were identified within the standard ASTM search distance around the Site.

Leaking Underground Storage Tanks (LUST)

There are two LUST incidents reported within a 1/4-mile radius of the Site. They are as follows:

- A release of diesel fuel was reported on November 22, 1989, incident number 892412 at Dongary Investments Inc., 4300 West 35th Place. A No Further Remediation Letter (NFR) was issued on July 12, 1996, indicating that the incident is closed. A second release of diesel fuel was reported on October 31, 1990, incident number 903207. This incident remains open.

  These incidents are located up-gradient to the Site, however, due to distance from the Site it is unlikely that impact from this facility could adversely impact the Site.

- A release of a non-petroleum product was reported on November 21, 1990, incident number 903474, at SSCI Joint Venture, 4359 West 36th Street. A No

Further Remediation Letter (NFR) was issued in July 28, 2000, indicating that the incident is closed.

This incident is located west of the Site and in a cross-gradient direction relative to groundwater flow. Therefore, this incident , due to distance, direction, and the issuance of the No Further Remediation letter, does not present a concern to the Site.

Six other LUST incidents are located within 1/4-1/2 mile of the Site. Based on the distance of these incidents from the Site, it is not likely these incidents will adversely impact the site.

Underground Storage Tanks (UST)

The State of Illinois UST Report indicated that nine sites are listed on the UST database and are located within 1/4 mile of the Site. They are as follows:

- Institute of Gas Technology, 4201 West 36th Street (Campus Site)

  6,000-gallon gasoline
  5,300-gallon fuel oil

  These tanks are listed as closed and are presumably the tanks removed from the Campus Site by RW Collins in 1991.

- Coca-Cola – 4301 West 36th Street

  Four 10,000-gallon diesel
  20,000-gallon diesel
  1,000-gallon lube oil
  1,000-gallon used oil

  The tanks are listed as closed. Based on the location of the USTs (located west of the site), it is not likely that the UST has adversely impacted the site.

- Ace Hardware – 4300 West 35th Place

  Four 10,000-gallon diesel
  Three 12,000-gallon diesel
  Two 20,000-gallon diesel
  10,000-gallon gasoline
  6,000-gallon used oil
  Two 1,000-gallon used oil
  550-gallon used oil
  1,000-gallon unknown substance

The tanks are listed as having been removed. No incident number was reported, therefore, these are unlikely to have affected the subject Site.

- Bridge Terminal Services – 4300 West 35th Place

  Three 12,000-gallon diesel
  Two 20,000-gallon diesel
  1,000-gallon unknown substance
  550-gallon used oil

  The tanks have all been removed, except for one 12,000-gallon diesel tank. Based upon the location of the facility, it is unlikely that a release could adversely impact the subject Site.

- R&L Carriers – 4359 West 36th Street

  Two 10,000-gallon diesel
  20,000-gallon diesel
  3,000-gallon gasoline

  The tanks are listed as active. Based on the location of the USTs (located west of the site), it is not likely that the UST could adversely impact the Site.

- Thurston Motor Lines – 4359 West 36th Street

  10,000-gallon gasoline
  10,000-gallon diesel

  The tanks are listed as currently in use. Based on the location of the USTs, (located to the west of the site) and the inferred southern direction of groundwater flow across the Site, it is not likely that the USTs have adversely impacted the Site.

Six other UST incidents are located within 1/4-1/2 mile of the site. Based on the distance of these incidents from the Site, it is not likely these incidents will adversely impact the Site.

Site Remediation Program Database (SRP)

This database identifies the status of all voluntary remediation projects administered through the pre-notice site cleanup program and the site remediation program. There are two SRP sites listed in the database.

Peoples Gas and Light, 4161 West 36th Street, is listed in the SRP database (#0316580022). The facility is located < 1/8 mile to the east of the site. The site remains active. As both the Campus and Option Sites are located within the limits of

the former Peoples Gas and Light facility, impacts from these operations could affect the subject Site.

Coca Cola USA, 4301 West 36th Street, is listed in the SRP database (#0316580016). This facility is located <1/8 mile to the west of the site. A comprehensive No Further Remediation letter was issued on August 11, 1999.

Unplottables

There are nineteen (19) sites with poor or inadequate address information in the EDR report. Based on distance and direction of the sites, they are not expected to adversely impact the soil and/or groundwater quality on the Site.

4.0 PREVIOUS SUBSURFACE INVESTIGATIONS

As discussed in previous sections, the Campus Site and Option Site were historically part of a much larger parcel of land owned and operated by the Peoples Gas, Light, and Coke. Additionally, at the Campus Site, various materials and wastes have historically been stored and used by the various tenants (such as IGT), including coal and coal dust, toluene, spent pot liner, various unspecified solvents, gasoline and fuel oil. While none of these materials have been documented by any regulatory agency to have been released into the soil or groundwater, industrial operations of this type can commonly result in widespread degradation of soil and groundwater quality. Therefore, in an effort to quantify the likelihood of widespread degradation, three subsurface investigations have been conducted by or on behalf of UIRC (two at the Campus Site; one at the Option Site).

The summary and conclusions drawn from the investigations are as follows:

Campus Site Subsurface Investigation (1998)

Soil samples were collected from the Campus Site during two separate subsurface investigations, one on March 5, 1998 (8 locations) and the second on April 2, 1998 (7 locations). In a report dated April 7, 1998 (attached), LFR summarized the results and concluded the following:

- Both subsurface investigations were conducted to determine whether widespread environmental degradation of the subsurface is present at the Site; these studies were not a detailed analysis of every location on the Site that may have been exposed to hazardous materials.
- Soil samples collected during the subsurface investigations were analyzed for the types of compounds that could be expected to be present in the event of a release to the environment, including VOCs, PNAs and selected metals.
- The laboratory results from the March 5, 1998 sampling event show that no organic compounds were detected at concentrations above Tier 1 Industrial/Commercial Cleanup Objectives as specified in 35 Illinois Administrative Code Part 742. Naturally occurring metals were detected in site soils; however, none were detected at concentrations exceeding their current respective state cleanup levels.
- The laboratory results from the April 2, 1998 sampling event show that, although PNAs were detected in the soil samples, none were present above the Construction Worker standards as referenced in the TACO regulations.
- Based upon the laboratory reports, there does not appear to be site-wide environmental degradation of the soil at concentrations exceeding Illinois cleanup levels. Therefore, based upon the information reviewed, no additional expenditures

for environmental investigations or any expenditures for environmental remediation are anticipated at this time.

- Based upon the number of soil samples collected (15 locations within a 9.7 acre site), LFR cannot determine whether isolated areas of contamination currently exist, and if present, the resultant cost to remedy the problem. Furthermore, tenant actions may, in the future, result in an unintended release of hazardous materials to the environment. However, in either case, the Illinois Tiered Approach to Corrective Action Objectives (TACO) regulations can be used to determine whether a significant clean-up will be required, or, based upon the potential risk to human health and the environment, the material can be left in place without incurring significant cost. In part, the TACO regulations were created to minimize unnecessary and costly remedial actions that would demonstrate minimal benefit to the protection of human health and the environment.

Based upon the data collected during this Phase I ESA, the above conclusions reached in 1998 are still applicable to the Campus Site.

Option Site Subsurface Investigation (1999)

Soil samples were collected from 12 soil borings on the Option Site on February 19, 1999. In a report dated March 10, 1999 (attached), LFR presented the following:

- In general, soil borings encountered 5 to 14 feet of fill material below the ground surface. The fill material included various amounts of gravel, sand, silt, clay, cinders, brick, glass and miscellaneous debris. Below the fill was stiff clay that appears to be native glacial till. Soil boring SB3 (northwest corner of the site) encountered oil/tar-coated soil from approximately 9 feet bgs to termination at 15 feet bgs. Groundwater was not encountered during this investigation.
- Remediation objectives for the soil ingestion exposure route are applicable to the upper 3 feet of soil. No chemicals or metals were detected in this interval at a concentration greater than their respective remediation objective for this exposure route.
- Remediation objectives for the soil inhalation exposure route are applicable to the upper 10 feet of soil or within 10 feet of any manmade pathway (e.g., sewers and basements). Benzene and Toluene were detected at concentrations of 31.8 and 44 milligrams per kilogram (mg/kg), respectively, in a sample collected from soil boring SB3 at 9 to 11 feet bgs. The Benzene and Toluene remediation objectives for this exposure route are 1.5 and 42 mg/kg, respectively. No metals or other chemicals were detected at a concentration greater than their respective remediation objective for this route.
- Groundwater was not encountered during the investigation. However, several compounds were detected above their Tier 1 migration to groundwater objectives. Tier 2 objectives have not been calculated. However, given the prohibition on

groundwater for potable use in the City of Chicago, this exposure route is not likely to be of significant concern.

- The presence of tar-coated sand in soil boring SB3 is likely the result of the historical use of the property by Peoples Gas, Light, and Coke (Peoples). Peoples Gas and Light has contacted several property owners in the area, including UIRC, for the purpose of conducting a subsurface investigation pursuant to their recent enrollment of their former facility into the Illinois Site Remediation Program (#0316580022).

Based upon current use of the Option Site for storage of intermodal containers, no change in the Site conditions would be expected. Additionally, this Site is part of the larger facility enrolled by Peoples Gas and Light in the Illinois Site Remediation Program.

5.0 CONCLUSIONS AND RECOMMENDATIONS

LFR identified the following recognized environmental condition at this Site:

- The Campus Site and Option Site were historically part of a much larger parcel of land owned and operated by the Peoples Gas, Light, and Coke. Additionally, at the Campus Site, various materials and wastes have historically been stored and used by the various tenants (such as IGT), including coal and coal dust, toluene, spent pot liner, various unspecified solvents, gasoline and fuel oil. While none of these materials have been documented by any regulatory agency to have been released into the soil or groundwater, industrial operations of this type can commonly result in widespread degradation of soil and groundwater quality.

As a result of the above condition, three subsurface investigations were conducted on behalf of UIRC. As discussed in Section 4.0, the results of both investigations were consistent with the historical use. However, with the possible exception of the oil-coated sand noted on the Option Site, neither investigation revealed impacts requiring significant remediation. By enrolling the Site in the Illinois Site Remediation Program, Peoples Gas and Light has acknowledged their responsibility to assess and if necessary, remediate impacts from their historical operations. It is presumed that the oil-coated sand on the Option Site is the result of their operations. Finally, there is no evidence that current operations at the Site have had any negative impacts to the subsurface.

6.0 LIMITATIONS

This Phase I ESA did not include collection or analysis of soil or groundwater samples; collection or analysis of construction materials for asbestos; assessment of the potential presence of PCBs in electrical equipment; assessment of natural hazards such as naturally occurring asbestos, radon gas, or methane gas; assessment of the potential presence of radio nuclides or electromagnetic fields; or assessment of non-chemical hazards, such as the potential for damage from earthquakes or floods, or the presence of endangered species or wildlife habitats.

The observations and conclusions presented in this report are professional opinions based on the scope of activities and information obtained through the ESA described in the report. Opinions presented in the report apply to site conditions at the time of our study, and cannot apply to site conditions or changes of which we are not aware, or which we have not had the opportunity to evaluate. It must be recognized that any conclusions drawn from these data rely on the integrity of the information available to LFR at the time of the investigation, and that a full and complete determination of environmental risks cannot be made.

This report is exclusively for the use of the Urban Investment Research Corporation and its lenders. Any reliance of this report by any other party shall be at such party's sole risk.

7.0 REFERENCES

The EDR-Radius Map with GeoCheck™, Elgin Public Works Department, 35 Ann Street, Elgin, Illinois, 60120, Environmental Data Resources, Inc., 3530 Post Road, Southport, Connecticut, 06490, February 28, 2001.

Flood Insurance Rate Map, City of Elgin, Illinois, Kane and Cook Counties, Federal Emergency Management Agency, Community panel number 170087 0007 D, Revised April 17, 1984.

U. S. Department of Agriculture Soil Conservation Service's Soil Survey of DuPage and Cook Counties, Illinois, 1979.

Mr. Eric Warden, UIRC Property Manager

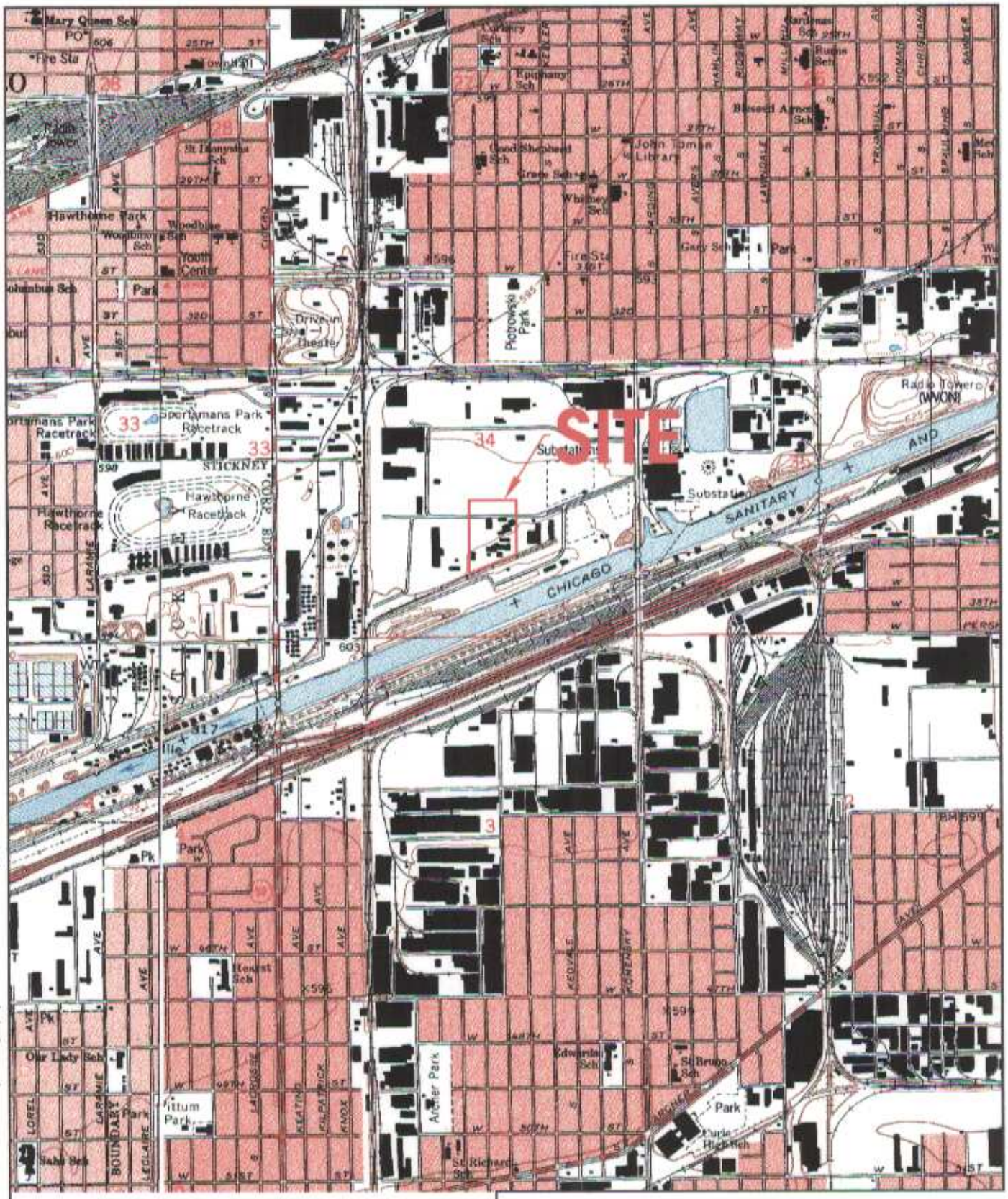
Phase I Environmental Site Assessment for 4201 W. 36th Street, Chicago, Illinois dated February 23, 1998. Environmental Protection Industries, South Holland, Illinois.

Report on Environmental Considerations for Institute of Gas Technology 4201 W. 36th Street, Chicago, Illinois dated April 7, 1998. LFR Levine-Fricke, Elgin, Illinois.

Preliminary Results: 36th Street Option Site Investigation dated March 10, 1999. LFR Levine-Fricke, Elgin, Illinois.

Preliminary Geotechnical Results: 36th Street Option Property Site Investigation dated March 12, 1999. LFR Levine-Fricke, Elgin, Illinois.

Figures



Source:
Berwyn, Illinois (1993) and
Englewood, Illinois (1993)
USGS 7.5 Minute Series
Quadrangle Map

Site Location Map

UIRC
4201 West 36th Street
Chicago, Illinois

LFR
LEVINE•FRICKE

Figure 1

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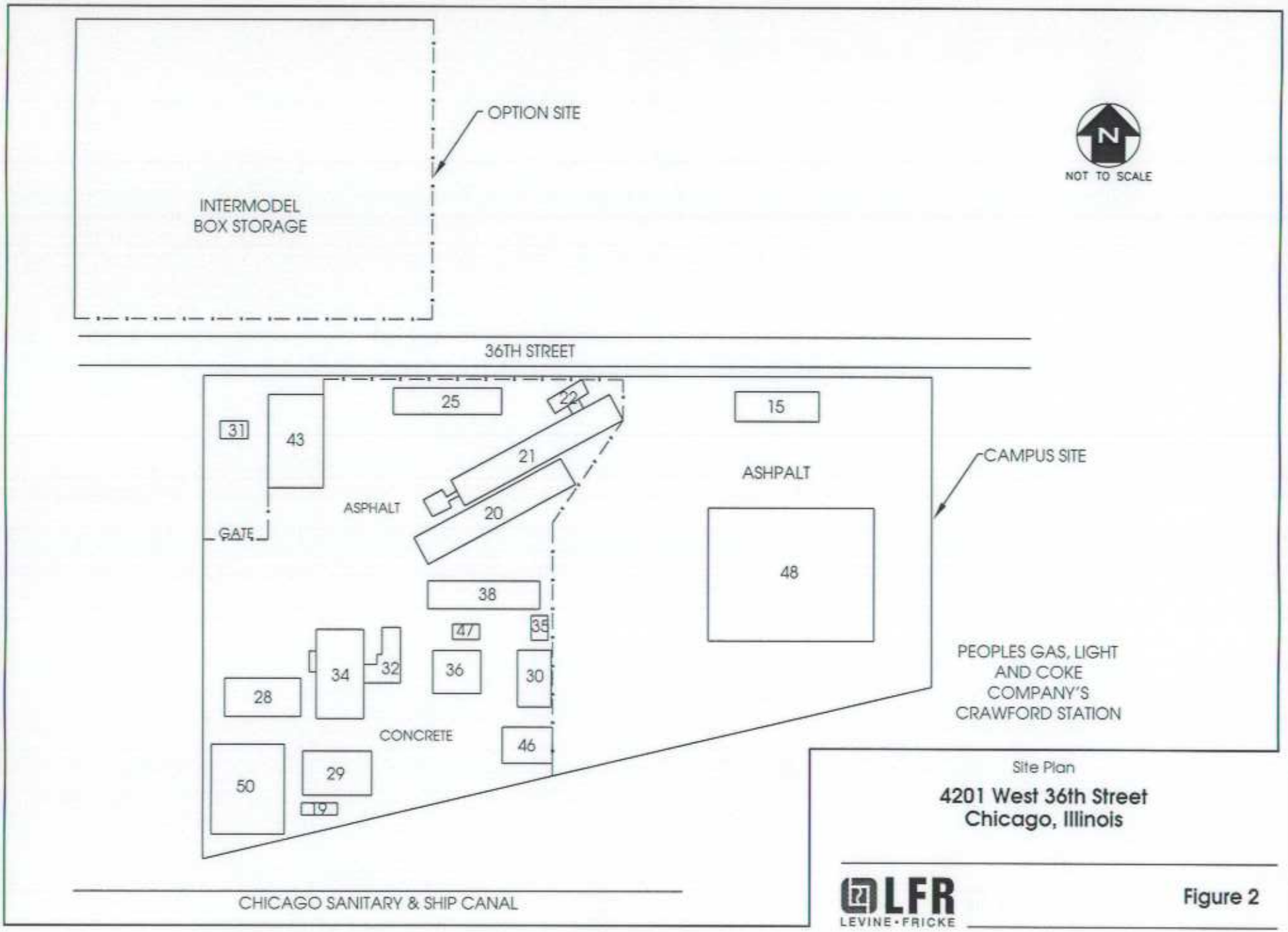

Site Plan

4201 West 36th Street
Chicago, Illinois

LFR
LEVINE • FRICKE

Figure 2

T:\UIRC\11082-00 W 36th St\Drawings\Figure02

Appendix B

Sanborn Maps

Environmental Data Resources, Inc.

"Linking Technology with Tradition"

Sanborn® Map Report

Ship to: Andrea Ferraro
LFR Levine-Fricke
630 Tollgate Road
Elgin, IL 60123

1094579DPM 847-695-8855

Order Date: 7/24/2002 **Completion Date:** 07/26/2002
Inquiry #: 820084.2S
P.O. #: NA
Site Name: UIRC/4220
Address: 4201 West 36th Street
City/State: Chicago, IL 60632
Cross Streets:

Based on client-supplied information, fire insurance maps for the following years were identified

1936 - 1 - map
1951 - 1 - map
1975 - 1 - map
1987 - 1 - map
1989 - 1 - map
1992 - 1 - map

Total Maps: 6

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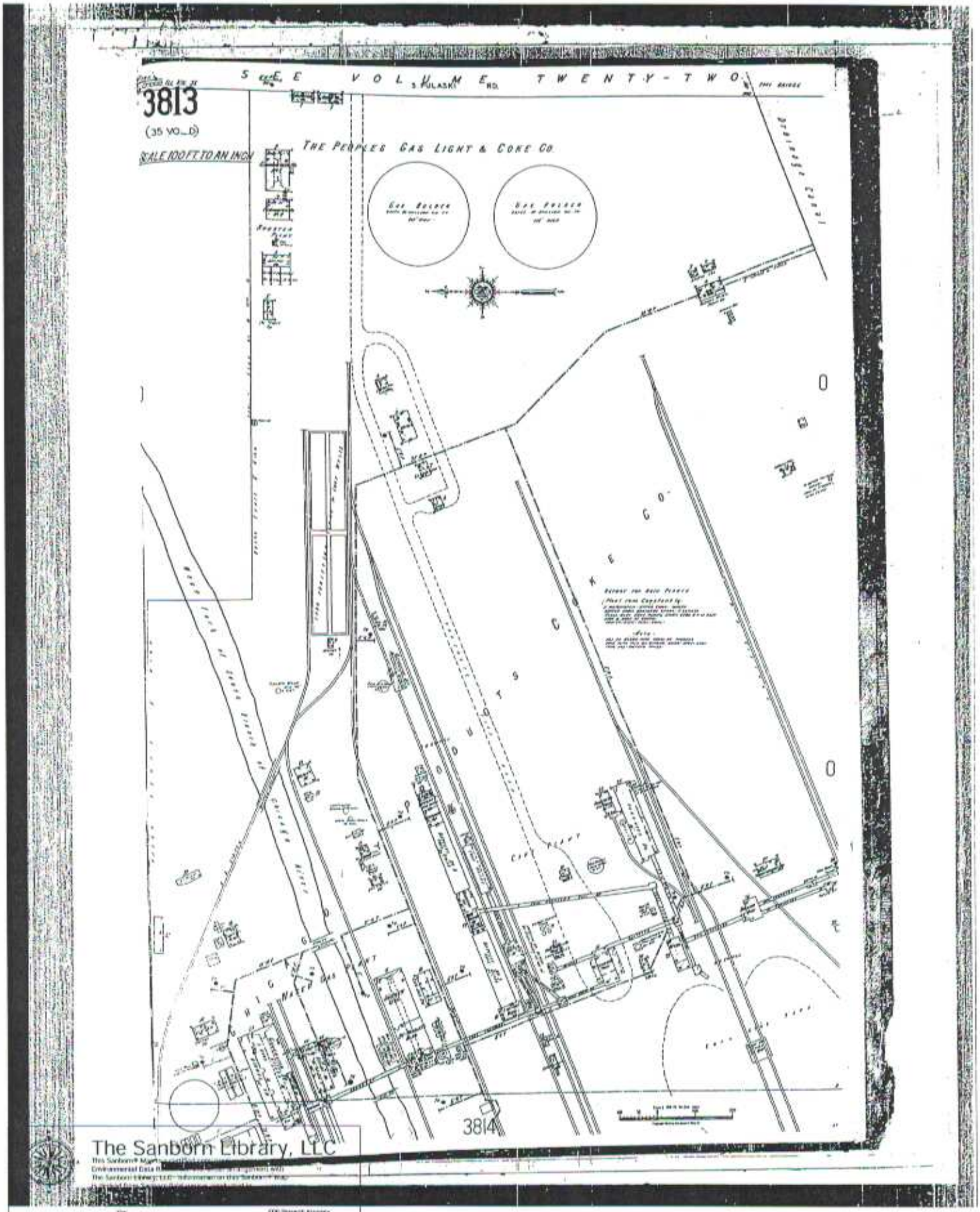

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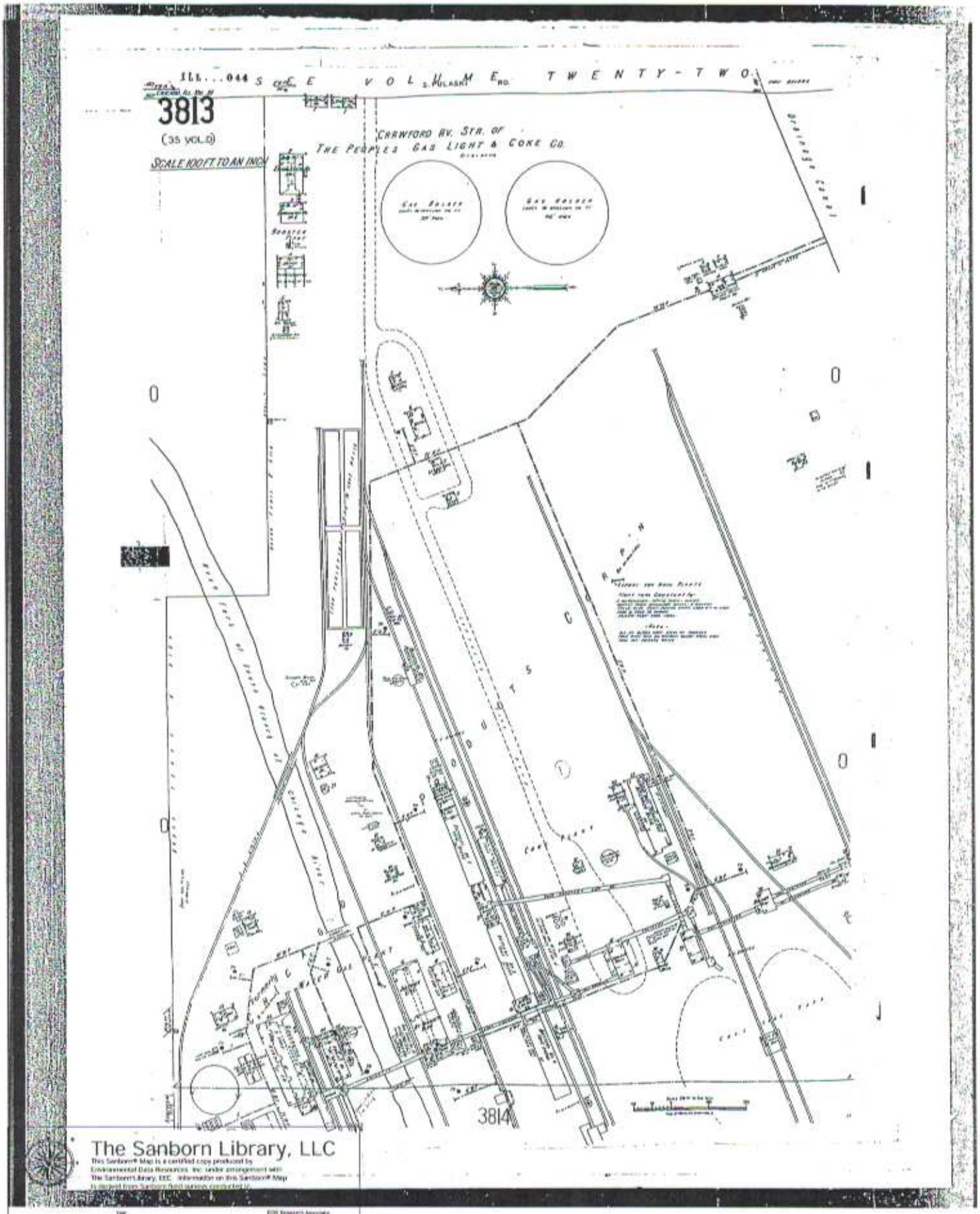

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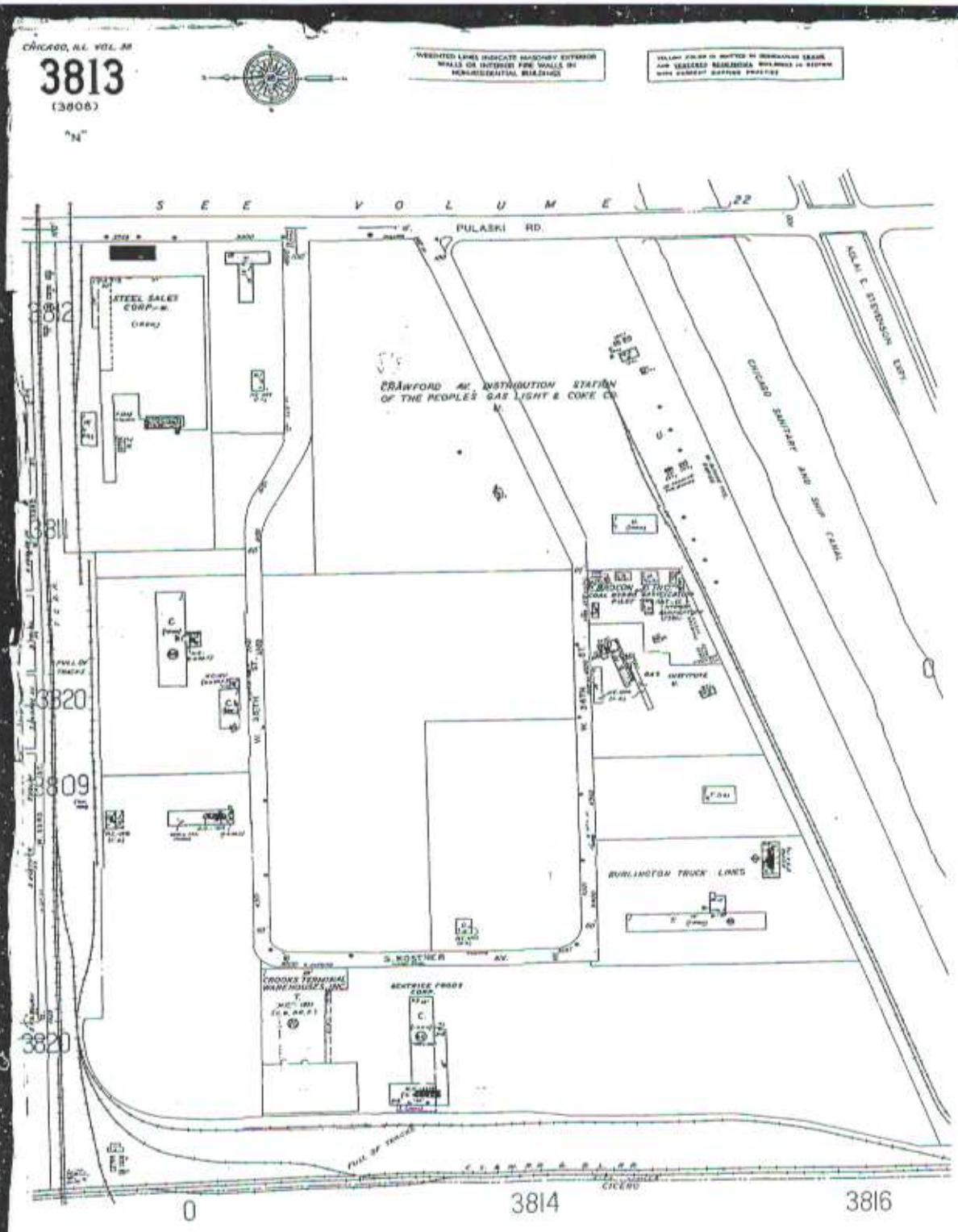

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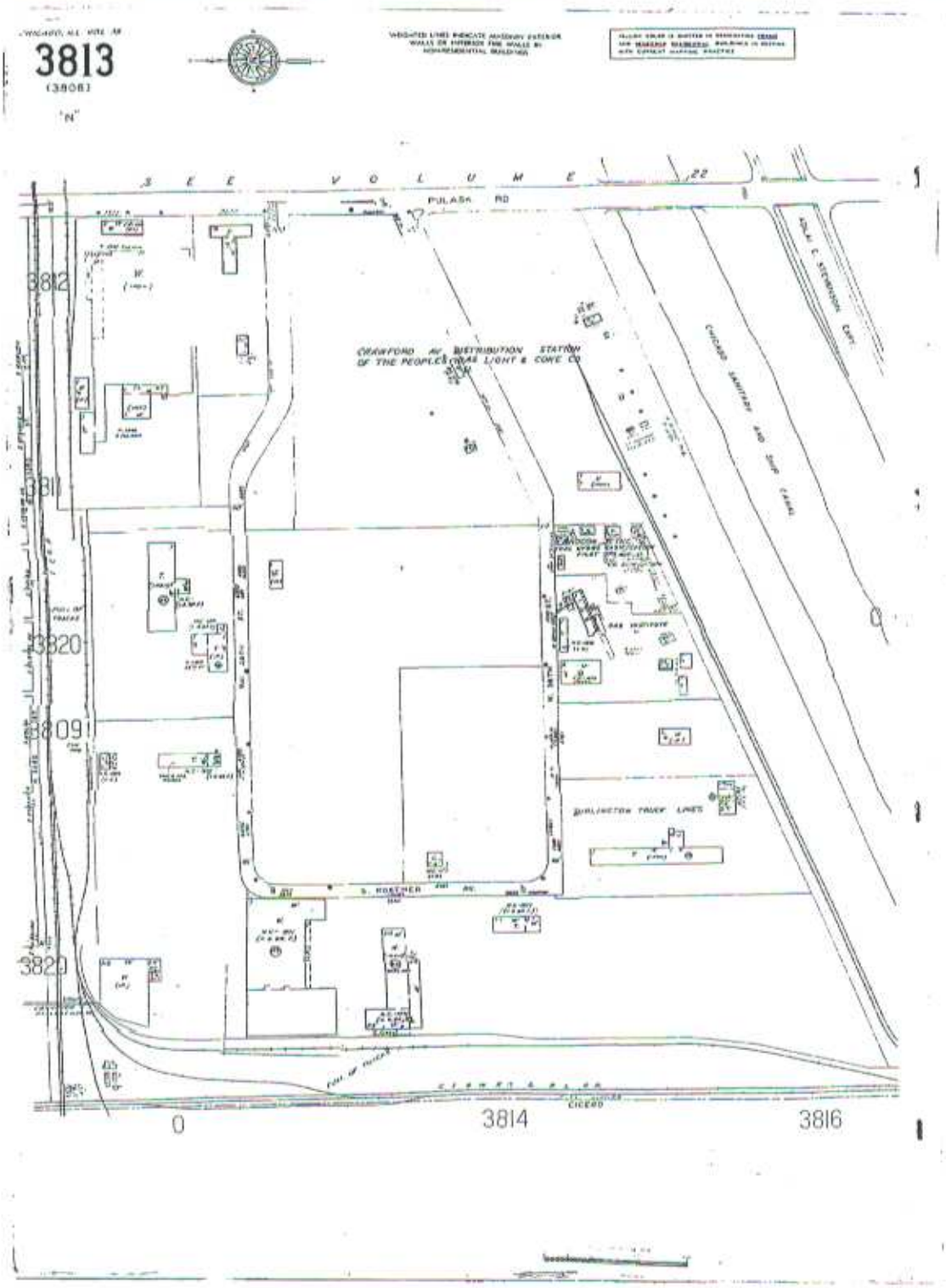

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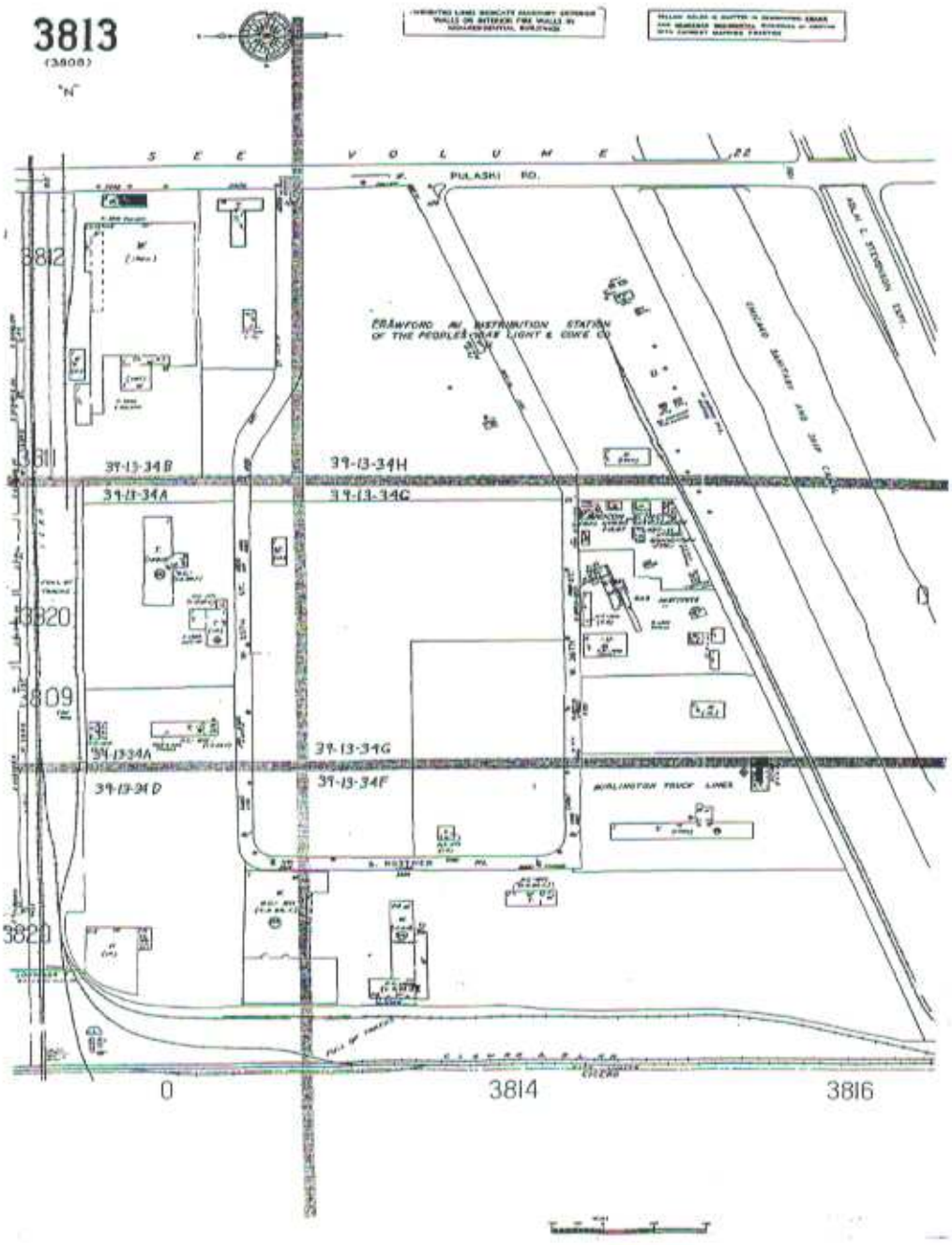

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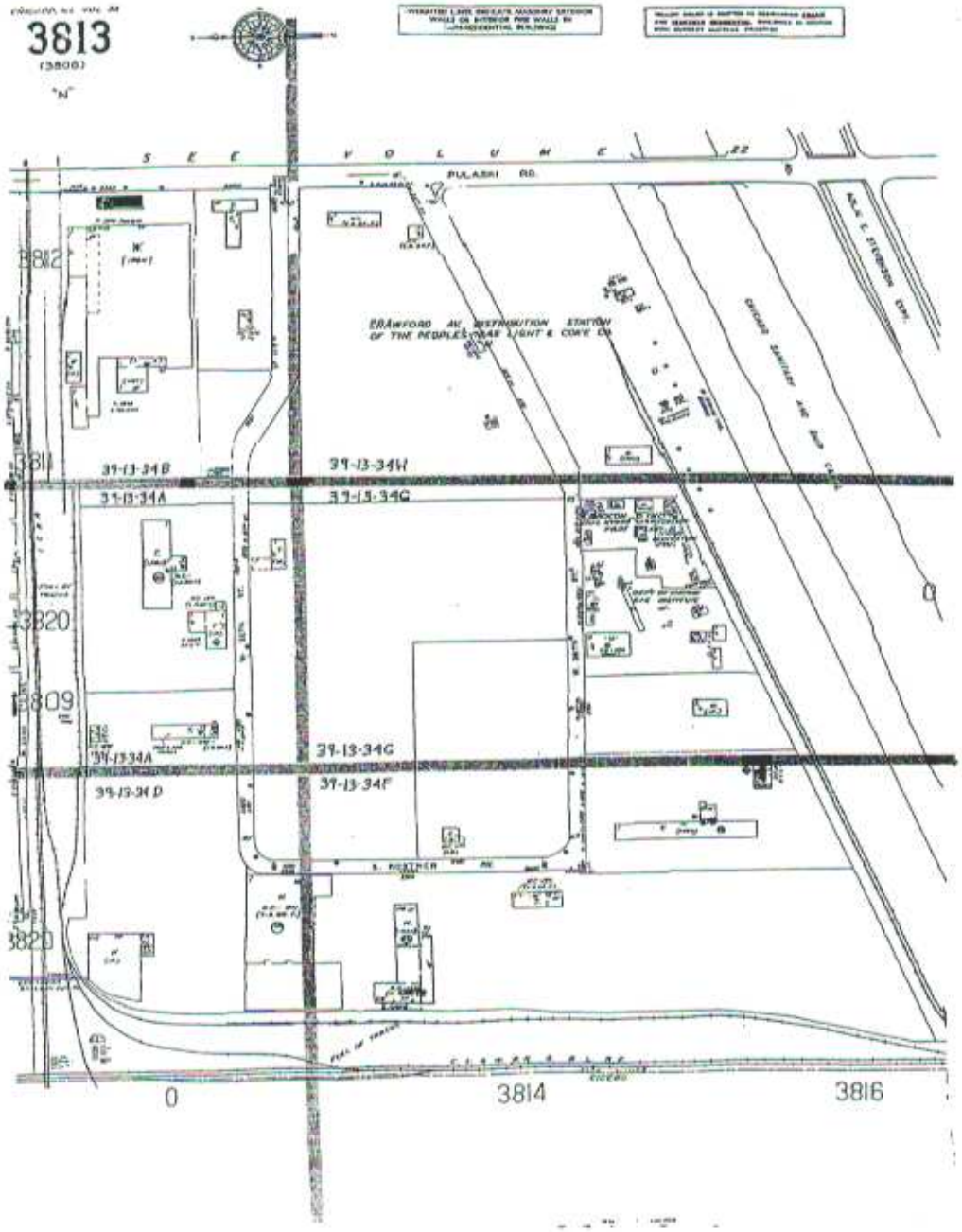

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PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

For

LNG FACILITY
4220 WEST 36TH STREET
CHICAGO, ILLINOIS

Prepared for

FIEDLER GROUP
2322 West Third Street
Los Angeles, CA 90057

Prepared by

PROFESSIONAL SERVICE INDUSTRIES, INC.
4421 Harrison Street
Hillside, Illinois 60162

PSI PROJECT NUMBER: 0046517

March 28, 2013

Information To Build On
Engineering • Consulting • Testing

March 28, 2013

Mr. Ken Barton
Fiedler Group
2322 W. Third Street
Los Angeles, CA 90057

Re: Phase II Environmental Site Assessment
LNG Facility
4220 West 36th Street
Chicago, Cook County, Illinois 60632
PSI Project Number: 0046517

Dear Mr. Barton:

Professional Service Industries, Inc. (PSI) has completed the Phase II Environmental Site Assessment (ESA) activities for the LNG Facility property located at 4220 West 36th Street in Chicago, Illinois.

Thank you for choosing PSI as your consultant for this project. If you have any questions regarding the information contained herein, or if we can be of additional service, please contact the undersigned at (708) 236-0720.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Jeff Goeden
Department Manager

Michael Monteith, P.G.
Principal Consultant

Enclosures

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EXECUTIVE SUMMARY

Professional Service Industries, Inc. (PSI) has prepared this Phase II Environmental Site Assessment (ESA) Report for the LNG Facility, situated on a lot to the east of South Kostner Avenue, and to the south of West 35th Place, located at 4220 West 36th Street in Chicago, Illinois (the Site). **Figure 1** identifies the approximate location of the Site. The PIN number for the Site is 36-420-7053. The Site is a rectangular shaped parcel, consisting of a gravel/broken asphalt unpaved parking lot used as a semi-trailer truck and intermodal container storage facility.

PSI completed a subsurface investigation on March 18, 2013 to supplement the existing Site data in an effort to document the existing soil conditions prior to leasing the property and assist in determining if contaminated soil will need to be addressed during construction.

The Phase II ESA soil analytical results indicate the following:

GP-1 (5.5' to 7.5') Concentrations of Benzo(a)pyrene and Dibenz(a,h)anthracene exceeded the Industrial/Commercial and Construction Worker Ingestion route specific values and the soil component of the class I and II groundwater ingestion exposure route values listed in the Illinois Environmental Protection Agency's (IEPA) cleanup guidance document "The Tiered Approach to Corrective Action Objectives (TACO). Concentrations of Benzo(a)anthracene, Benzo(b)fluoranthene and Indeno(1,2,3-cd)pyrene exceeded the Industrial/Commercial ingestion route specific values and soil component of the class I and II groundwater ingestion exposure route values listed in TACO. Concentrations of Naphthalene and Mercury exceeded the construction worker inhalation route specific values for soil listed in TACO.

GP-2 (4' to 6') Concentrations of Benzo(a)anthracene exceeded the Industrial/commercial ingestion route specific values and the soil component of the class I and II groundwater ingestion exposure route values listed in TACO. Concentrations of Benzo(a)pyrene and Benzo(b)fluoranthene exceeded the Industrial/Commercial inhalation exposure route values and the soil component of the class I groundwater ingestion exposure route listed in TACO. Concentrations of Arsenic exceeded the Industrial/Commercial ingestion exposure route values for soil listed in TACO. Concentrations of Mercury exceeded the construction worker inhalation exposure route values for soil listed in TACO.

GP-3 (5.5' to 7.5') Concentrations of Benzo(a)pyrene exceeded the Industrial/Commercial ingestion exposure route values for soils listed in TACO.

GP-4 (6' to 8') Concentrations of Mercury exceeded the construction worker inhalation exposure route values for soil listed in TACO.

GP-5 (2' to 4') Concentrations of Benz(a)anthracene exceeded the soil component of the class I groundwater ingestion exposure route values listed in TACO. Concentrations of Benzo(a)pyrene exceeded the Industrial/Commercial ingestion exposure route values for soil listed in TACO.

Soil analytical results indicated that the soil samples analyzed for Volatile Organic Compounds (VOCs) were below the laboratory reporting limits, which are below the most stringent Tier I soil remediation objectives (SROs) listed in TACO. Certain Polynuclear Aromatic Hydrocarbons (PNAs) and Metals exceeded the Tier I industrial/commercial SROs listed in TACO. The Soil analytical results are listed in **Tables 1 and 2**.

Based on the results of the Phase II ESA, the Site has impacted soils present above the industrial/commercial SROs. SRO pathways exceeded included the ingestion, construction worker ingestion, construction worker inhalation, and the soil component of the class I and II groundwater ingestion routes.

PSI recommends that construction workers be informed of the contaminants of concern (COCs), the approximate location of the COCs and the types of precautions to take for preventing exposure to these COCs. Additionally, any impacted soil requiring disposal should be properly handled and disposed at a licensed special waste landfill. PSI understands that the client intends on leasing this property and recommends informing the property owner of these findings. If the property owner elects to pursue a no further remediation (NFR) letter, PSI recommends that the site be enrolled in the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP).

1.0 INTRODUCTION

PSI has prepared this Phase II ESA Report for the LNG Facility, situated on a lot to the east of South Kostner Avenue, and to the south of West 35th Place, located at 4220 West 36th Street in Chicago, Illinois (the Site). **Figure 1** identifies the approximate location of the Site. The PIN number for the Site is 36-420-7053. The Site is a rectangular shaped parcel, consisting of a gravel/broken asphalt unpaved parking lot and is used as a semi-trailer truck and intermodal container storage facility. Adjoining properties are: the Intermodal Maintenance Group, a semi-trailer and container storage facility to the north; R+L Carriers and Urban Investment Research Corporation, containing office, warehouse, and parking lots to the south; Lagrou Properties, a warehouse with storage; and parking lots to the east.

PSI reviewed a former Phase I ESA prepared by LFR Levine-Fricke, dated August 12, 2002, and a subsurface investigation report prepared by LFR Levine-Fricke, dated March 10, 1999. These reports indicated that the Site was historically part of a bigger parcel of land owned and operated by Peoples Gas, Light, and Coke. The Site was noted as previously being developed with material handling equipment including railroad tracks and pipelines. The Site also had a tar decanter tank present and was noted as having ovens traversing the Site and an electrical substation located near the property boundaries. The past subsurface investigations detected concentrations of PNAs, benzene, and toluene above the IEPA Industrial/Commercial SROs. In addition, oil/tar-coated sands were encountered in a boring during this past investigation.

PSI completed a subsurface investigation on March 18, 2013 to supplement the existing Site data in an effort to document the existing soil conditions prior to leasing the property and assist in determining if contaminated soil will need to be addressed during construction.

2.0 SITE CHARACTERIZATION

2.1 Physical setting

PSI reviewed United States Geological Survey (USGS) Topographic (Topo) Maps and other information regarding the physical setting of the Site to assist with the interpretation of subsurface water movement near the property.

Summary	
USGS 7.5 Minute Topo Map	Based on the 1992 topographic map for MSR Maps
Soil Survey	USDA Soil Survey of DuPage County and Parts of Cook Counties, Illinois, 1979
ISGS Potential for Contamination of Shallow Aquifers from Land Burial of Municipal Wastes	Plate 1, 1984
Water Resources/Hydrogeology	U.S. Fish and Wildlife Service Online Wetlands Mapper
Notes: ISGS = Illinois State Geological Survey USDA = United States Department of Agriculture	

2.1.1 Site Topography

The 7.5 minute, 1992 topographic map reviewed indicates that the Site appears to be approximately 595 feet above mean sea level (MSL). The contour lines in the area of the Site indicate the area is relatively flat, the land slopes slightly to the south.

2.1.2 Geology/Hydrogeology

Based on a review of the geological map entitled Potential for Contamination of Shallow Aquifers in Illinois: Ill. GS Circular 532, 30 p., Berg, R.C., Kempton, J.P., and Cartwright, K. 1984, the predominant soil type in the area of the site is comprised of Type E soil, which is "Uniform, relatively impermeable silty or clayey till at least 50 feet thick; no evidence of interbedded sand and gravel".

According to the Soil Survey, the soil in the site area is categorized as Urban Land – Milford, which consists of built up areas and deep, nearly level, poorly drained soils that have a silty and clayey subsoil and formed in glacial lake sediment.

The hydrogeology of the area consists of two aquifer systems: the shallow bedrock and the deep underlying bedrock. In contact with the glacial till is the uppermost bedrock formation, the Silurian dolomite, which is part of the upper portion of a shallow aquifer system. Recharge to this aquifer is from precipitation which infiltrates and percolates to the aquifer. The bottom of the aquifer is defined by the Maquoketa Group. The Maquoketa Group, consisting of the shale and limestone with minor dolomite, creates a nearly impervious layer. Minor leakage can occur to lower aquifers in the region.

Groundwater flow is typically influenced by such factors as geological material, topography and presence of nearby surface water bodies, presence of nearby water supply wells and the influence of underground utilities. Based on our interpretation of the physical setting sources and our experience, PSI infers that the shallowest groundwater:

- Occurs at or near the surface in some areas;
- Exists under unconfined or perched conditions; and,
- Moves generally towards the south/southeast.

2.2 Site History

PSI reviewed a former Phase I ESA prepared by LFR Levine-Fricke, dated August 12, 2002, and a subsurface investigation report prepared by LFR Levine-Fricke, dated March 10, 1999. These reports indicated that the site was historically part of a bigger parcel of land owned and operated by Peoples Gas, Light, and Coke. The site was noted as previously being developed with material handling equipment including railroad tracks and pipelines. The site also had a tar decanter tank present and was noted as having ovens traversing the site and an electrical substation located near the property boundaries. The past subsurface investigations detected concentrations of PNAs, benzene, and toluene above the IEPA Industrial/Commercial SROs. In addition, oil/tar-coated sands were encountered in a boring during this past investigation.

3.0 SITE INVESTIGATION

3.1 Site-Specific Sampling Plan

Based on the information from the previous environmental reports reviewed, PSI was requested by the Fiedler Group to completed a subsurface investigation to supplement the existing Site data in an effort to document the existing soil conditions prior to leasing the property and assist in determining if contaminated soil will need to be addressed during construction.

3.1.1 Borings

PSI subcontracted C.S. Drilling, Inc. (CS Drilling) to complete the geoprobing activities. Prior to the geoprobe activities, DIGGER was contacted to locate any utilities that may be present on the site. The Phase II investigation consisted of completing a total of five geoprobe borings to approximately 12 feet bgs. Due to boring refusal in borings GP-1 and GP-3, these borings were drilled to a depth of (7.5) feet bgs. All downhole equipment was decontaminated between each probe point/auger location with distilled water and liqu-nox solution and a distilled water rinse. Geoprobe samplers were decontaminated between each sample collection point with distilled water and liqu-nox solution and a distilled water rinse. **Figure 2** identifies the approximate location of the geoprobe borings.

A PSI field geologist collected the soil samples, described the samples on field logs in accordance with the Unified Soil Classification System (USCS), and noted apparent signs of impact based on olfactory and visual observations. The soil was described according to soil type (silt, clay, sand, and variations), color, general visual moisture content (dry, moist, wet, saturated), and if it is a cohesive soil sample, a pocket penetrometer was used to measure field compressive strength.

Soil was continuously sampled from grade to the point terminus, at two foot intervals. Representative soil samples were immediately placed in zipper locked plastic baggies. The soil samples were chosen for field screening and potential laboratory analysis based on visual observations and/or noticeable odors. The samples were split in the field with a portion placed in a baggie, having all of its headspace removed, sealed, and immediately placed in a cooler with ice, with as little disturbance as possible, for potential laboratory analysis. The remaining soil sample was placed in a baggie with headspace and allowed to warm for field screening purposes. The soil sample was broken up to assist in the release of any potential volatile organic compounds (VOCs). The soil sample was screened with a calibrated photoionization detector (PID) with a 10.6eV lamp, by puncturing the zipper locked baggie with the PID tip to determine the presence of any VOCs. The boring log descriptions indicating and PID readings are provided in **Appendix A**.

3.1.3 Soils

One soil sample was collected from each geoprobe location (1 per boring) for laboratory analysis. The soil samples selected for laboratory analysis were based field screening results, visual observations, evident odors, or subsurface conditions encountered. The soil samples selected for laboratory analysis were placed in laboratory provided containers, labeled, placed in a cooler with ice, and logged on a chain of custody form. The soil samples were analyzed for

VOCs, PNAs, pH, and total concentrations of Resource Conservation Recovery Act (RCRA) 8 metals. .

3.2 Analytical Results

3.2.1 Soils (TACO Tier I Assessment)

The laboratory analytical results were compared to the Tier I industrial soil remediation objectives (SROs) listed in the Illinois Environmental Protection Agency's (IEPA) guidance document Part 742 "The Tiered Approach to Corrective Action Objectives" (TACO). A copy of the laboratory analytical report and chain-of-custody documentation is provided in **Appendix B**. The laboratory analytical results indicate concentrations below the most stringent industrial Tier I SROs listed in TACO except for the following:

GP-1 (5.5' to 7.5') Concentrations of Benzo(a)pyrene and Dibenz(a,h)anthracene exceeded the Industrial/Commercial and Construction Worker Ingestion route specific values and the soil component of the class I and II groundwater ingestion exposure route values listed in the IEPA cleanup guidance document TACO. Concentrations of Benzo(a)anthracene, Benzo(b)fluoranthene and Indeno(1,2,3-cd)pyrene exceeded the Industrial/Commercial ingestion route specific values and soil component of the class I and II groundwater ingestion exposure route values listed in TACO. Concentrations of Naphthalene and Mercury exceeded the construction worker inhalation route specific values for soil listed in TACO.

GP-2 (4' to 6') Concentrations of Benzo(a)anthracene exceeded the Industrial/commercial ingestion route specific values and the soil component of the class I and II groundwater ingestion exposure route values listed in TACO. Concentrations of Benzo(a)pyrene and Benzo(b)fluoranthene exceeded the Industrial/Commercial inhalation exposure route values and the soil component of the class I groundwater ingestion exposure route listed in TACO. Concentrations of Arsenic exceeded the Industrial/Commercial ingestion exposure route values for soil listed in TACO. Concentrations of Mercury exceeded the construction worker inhalation exposure route values for soil listed in TACO.

GP-3 (5.5' to 7.5') Concentrations of Benzo(a)pyrene exceeded the Industrial/Commercial ingestion exposure route values for soils listed in TACO.

GP-4 (6' to 8') Concentrations of Mercury exceeded the construction worker inhalation exposure route values for soil listed in TACO.

GP-5 (2' to 4') Concentrations of Benz(a)anthracene exceeded the soil component of the class I groundwater ingestion exposure route values listed in TACO. Concentrations of Benzo(a)pyrene exceeded the Industrial/Commercial ingestion exposure route values for soil listed in TACO.

4.0 CONCLUSIONS AND RECOMMENDATIONS

PSI has prepared this Phase II ESA Report for the property located at 4220 West 36th Street in Chicago, Illinois. The Phase II ESA consisted of the placement of five soil borings and collecting five soil samples for laboratory analysis.

PSI completed a subsurface investigation on March 18, 2013 to supplement the existing Site data in an effort to document the existing soil conditions prior to leasing the property and assist in determining if contaminated soil will need to be addressed during construction.

Soil analytical results indicated that the soil samples analyzed for VOCs were below the laboratory reporting limits, which are below the most stringent Tier I soil remediation objectives (SROs) listed in TACO. Certain PNAs and Metals exceeded the Tier I industrial/commercial SROs listed in TACO. The Soil analytical results are listed in **Tables 1 and 2**.

Based on the results of the Phase II ESA, the Site has impacted soils present above the industrial/commercial SROs. SRO pathways exceeded included the ingestion, construction worker ingestion, construction worker inhalation, and the soil component of the class I and II groundwater ingestion routes.

PSI recommends that construction workers be informed of the COCs, the approximate location of the COCs and the types of precautions to take for preventing exposure to these COCs. Additionally, any impacted soil requiring disposal should be properly handled and disposed at a licensed special waste landfill. PSI understands that the client intends on leasing this property and recommends informing the property owner of these findings. If the property owner elects to pursue a NFR letter, PSI recommends that the site be enrolled in the IEPA's SRP program.

TABLES

Table 1
Soil Analytical Results - VOCs
LNG Fueling Station, Chicago, IL

			Industrial/Commercial Route Specific Values for Soil		Construction Worker Route Specific Values for Soil		Soil Component of Groundwater Ingestion Exposure Route Values							
									Laboratory ID :	13030439-001	13030439-002	13030439-003	13030439-004	13030439-005
									Client Sample ID :	GP-1 5.5-7.5	GP-2 4.0-6.0	GP-3 5.5-7.5	GP-4 6.0-8.0	GP-5 2.0-4.0
									Date Collected :	03/18/2013 09:12	03/18/2013 10:35	03/18/2013 10:56	03/18/2013 11:08	03/18/2013 11:25
	CAS No.	Analyte	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class II	ADL					
VOC	67-64-1	Acetone	-----	100,000	-----	100,000	25	25		< 0.11	< 0.084	< 0.069	< 0.066	< 0.071
	71-43-2	Benzene	100	1.6	2,300	2.2	0.03	0.17		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-27-4	Bromodichloromethane	92	3,000	2,000	3,000	0.6	0.6		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-25-2	Bromoform	720	100	16,000	140	0.8	0.8		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	74-83-9	Bromomethane	2,900	15	1,000	3.9	0.2	1.2		< 0.015	< 0.011	< 0.0091	< 0.0089	< 0.0095
	78-93-3	2-Butanone								< 0.11	< 0.084	< 0.069	< 0.066	< 0.071
	75-15-0	Carbon disulfide	200,000	720	20,000	9.0	32	160		< 0.073	< 0.056	< 0.046	< 0.044	< 0.048
	56-23-5	Carbon tetrachloride	44	0.64	410	0.90	0.07	0.33		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	108-90-7	Chlorobenzene	41,000	210	4,100	1.3	1	6.5		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-00-3	Chloroethane								< 0.015	< 0.011	< 0.0091	< 0.0089	< 0.0095
	67-66-3	Chloroform	940	0.54	2,000	0.76	0.6	2.9		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	74-87-3	Chloromethane								< 0.015	< 0.011	< 0.0091	< 0.0089	< 0.0095
	124-48-1	Dibromochloromethane	41,000	1,300	41,000	1,300	0.4	0.4		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-34-3	1,1-Dichloroethane	200,000	1,700	200,000	130	23	110		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	107-06-2	1,2-Dichloroethane	63	0.70	1,400	0.99	0.02	0.1		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-35-4	1,1-Dichloroethene	100,000	470	10,000	3.0	0.06	0.3		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	156-59-2	cis-1,2-Dichloroethene	20,000	1,200	20,000	1,200	0.4	1.1		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	156-60-5	trans-1,2-Dichloroethene	41,000	3,100	41,000	3,100	0.7	3.4		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	78-87-5	1,2-Dichloropropane	84	23	1,800	0.50	0.03	0.15		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	10061-01-5	cis-1,3-Dichloropropene	57	2.1	1,200	0.39	0.004	0.02	0.005	< 0.0029	< 0.0022	< 0.0018	< 0.0018	< 0.0019
	10061-02-6	trans-1,3-Dichloropropene	57	2.1	1,200	0.39	0.004	0.02	0.005	< 0.0029	< 0.0022	< 0.0018	< 0.0018	< 0.0019
	100-41-4	Ethylbenzene	200,000	400	20,000	58	13	19		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	591-78-6	2-Hexanone								< 0.029	< 0.022	< 0.018	< 0.018	< 0.019
	108-10-1	4-Methyl-2-pentanone								< 0.029	< 0.022	< 0.018	< 0.018	< 0.019
	75-09-2	Methylene chloride	760	24	12,000	34	0.02	0.2		< 0.015	< 0.011	< 0.0091	< 0.0089	< 0.0095
	1634-04-4	Methyl tert-butyl ether	20,000	8,800	2,000	140	0.32	0.32		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	100-42-5	Styrene	410,000	1,500	41,000	430	4	18		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	79-34-5	1,1,2,2-Tetrachloroethane								< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	127-18-4	Tetrachloroethene	110	20	2,400	28	0.06	0.3		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	108-88-3	Toluene	410,000	650	410,000	42	12	29		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	71-55-6	1,1,1-Trichloroethane	---	1,200	---	1,200	2	9.6		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	79-00-5	1,1,2-Trichloroethane	8,200	1,800	8,200	1,800	0.02	0.3		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	79-01-6	Trichloroethene	520	8.9	1,200	12	0.06	0.3		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	75-01-4	Vinyl chloride	7.9	1.1	170	1.1	0.01	0.07		< 0.0073	< 0.0056	< 0.0046	< 0.0044	< 0.0048
	1330-20-7	Xylenes, Total	410,000	320	41,000	5.6	150	150		< 0.022	< 0.017	< 0.014	< 0.013	< 0.014

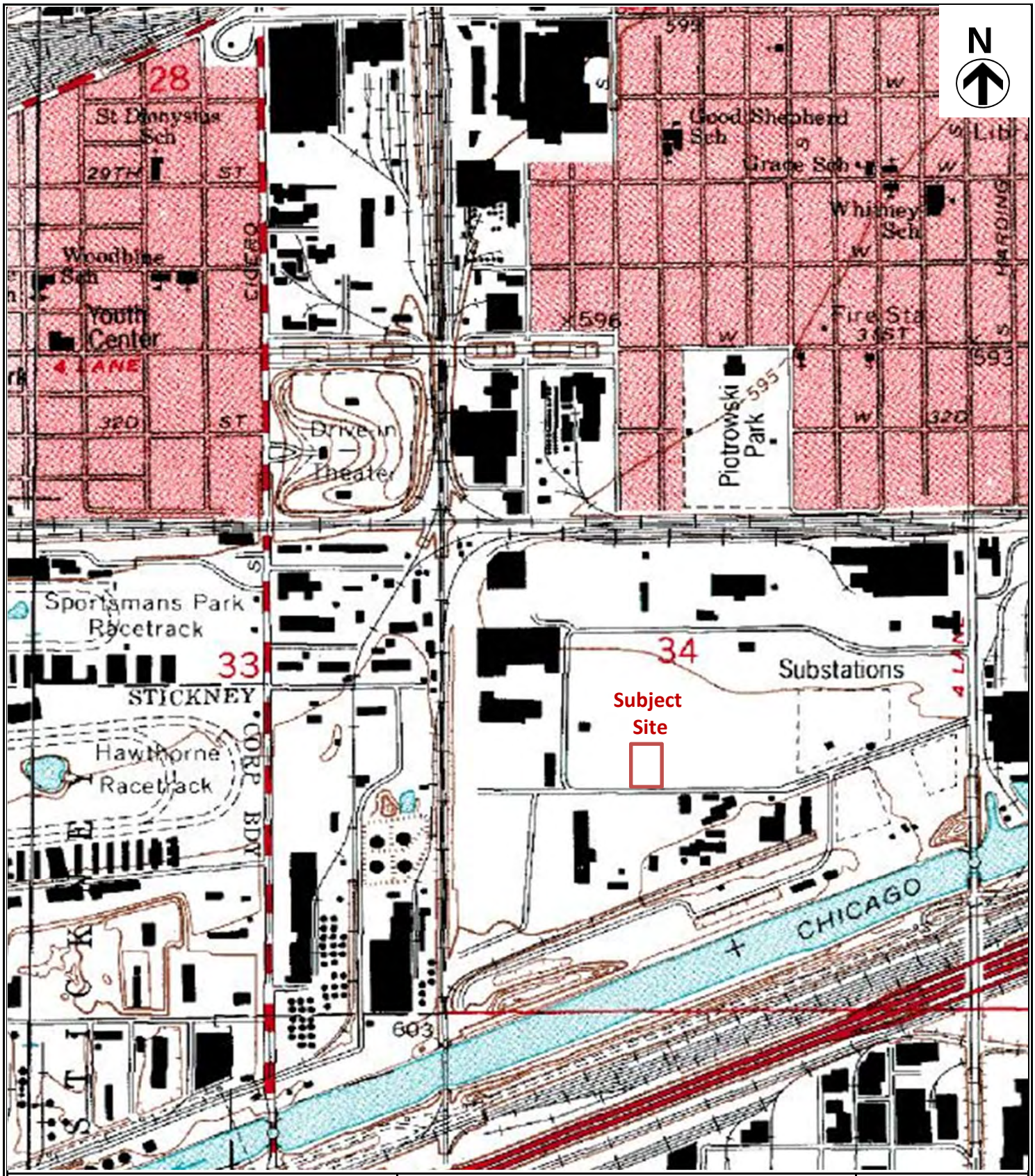
Concentrations in mg/kg

Table 2
Soil Analytical Results - PNAs and Metals
LNG Fueling Station, Chicago, IL

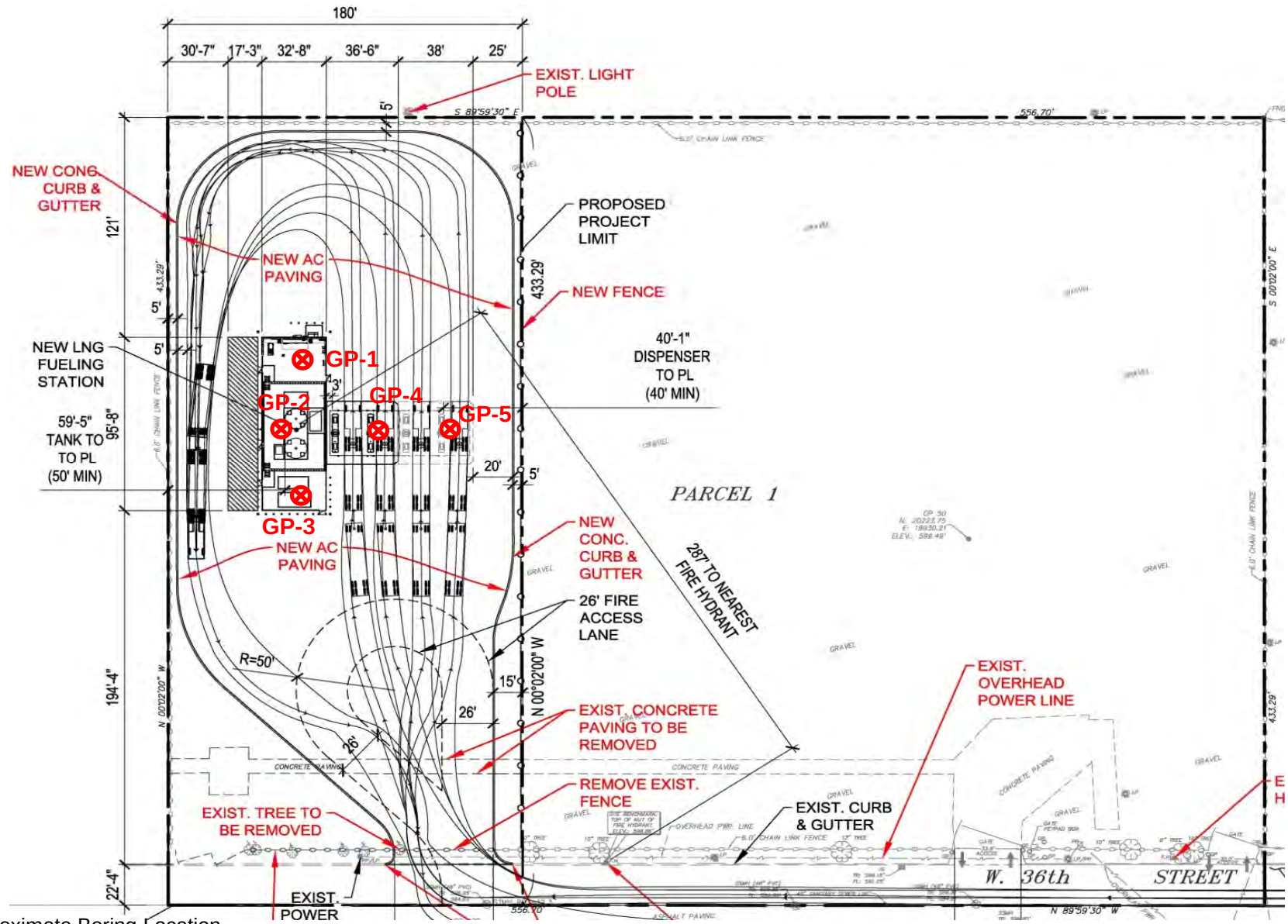
			Industrial/Commercial Route Specific Values for Soil		Construction Worker Route Specific Values for Soil		Soil Component of Groundwater Ingestion Exposure Route Values							
									Laboratory ID :	13030439-001	13030439-002	13030439-003	13030439-004	13030439-005
									Client Sample ID :	GP-1 5.5-7.5	GP-2 4.0-6.0	GP-3 5.5-7.5	GP-4 6.0-8.0	GP-5 2.0-4.0
									Date Collected :	03/18/2013 09:12	03/18/2013 10:35	03/18/2013 10:56	03/18/2013 11:08	03/18/2013 11:25
	CAS No.	Analyte	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class II	ADL					
PNA	83-32-9	Acenaphthene	120,000	---	120,000	---	570	2,900		4.6	0.37	0.098	0.041	0.1
	208-96-8	Acenaphthylene								44	3.4	0.59	0.18	0.64
	120-12-7	Anthracene	610,000	---	610,000	---	12,000	59,000		110	5.9	0.69	0.28	1
	56-55-3	Benz(a)anthracene	8	---	170	---	2	8		**170**	**13**	1.6	0.79	**2.3**
	50-32-8	Benzo(a)pyrene	0.8	---	17	---	8	82		**130**	**11**	**1.2**	0.66	**1.8**
	205-99-2	Benzo(b)fluoranthene	8	---	170	---	5	25		**140**	**11**	1.2	0.6	1.9
	191-24-2	Benzo(g,h,i)perylene								83	6.6	0.73	0.41	1.1
	207-08-9	Benzo(k)fluoranthene	78	---	1,700	---	49	250		**120**	10	1.2	0.6	1.5
	218-01-9	Chrysene	780	---	17,000	---	160	800		**180**	13	1.7	0.82	2.3
	53-70-3	Dibenz(a,h)anthracene	0.8	---	17	---	2	7.6		**38**	0.62	0.29	0.15	0.4
	206-44-0	Fluoranthene	82,000	---	82,000	---	4,300	21,000		500	28	3.2	1.5	5.8
	86-73-7	Fluorene	82,000	---	82,000	---	560	2,800		54	3	0.45	0.16	0.53
	193-39-5	Indeno(1,2,3-cd)pyrene	8	---	170	---	14	69		**78**	6.1	0.67	0.35	0.99
	91-20-3	Naphthalene	41,000	270	4,100	1.8	12	18		**4.1**	0.48	0.62	0.057	0.1
	85-01-8	Phenanthrene								270	18	2.1	0.92	3.6
	129-00-0	Pyrene	61,000	---	61,000	---	4,200	21,000		340	21	2.6	1.3	3.8
INORG	7440-38-2	Arsenic	13.0/11.3	1,200	61	25,000				12	**22**	10	10	8.7
	7440-39-3	Barium	140,000	910,000	14,000	870,000				100	76	63	67	73
	7440-43-9	Cadmium	2,000	2,800	200	59,000				< 0.6	0.72	< 0.61	< 0.58	< 0.6
	7440-47-3	Chromium	6,100	420	4,100	690				19	19	20	19	22
	7439-92-1	Lead	800	---	700	---				62	130	46	33	21
	7439-97-6	Mercury	610	16	61	0.1				**0.13**	**0.38**	0.036	**0.11**	< 0.022
	7782-49-2	Selenium	10,000	---	1,000	---				< 1.2	1.7	1.6	1.5	< 1.2
	7440-22-4	Silver	10,000	---	1,000	---				< 1.2	< 0.99	< 1.2	< 1.2	< 1.2

Concentrations in mg/kg

FIGURES



psi Information To Build On Engineering • Consulting • Testing	**Project Name:** LNG Facility **Project Location:** 4220 West 36th Street Chicago, Illinois **PSI Project No.:** 0046517 **Drawn By:** SCD		**Figure 1** **Site Location Map**



Approximate Boring Location

50 feet

psi Information To Build On Engineering • Consulting • Testing	**Project Name:** LNG Facility **Project Location:** 4220 West 36th Street Chicago, Illinois	**PSI Project No.:** 0046517 **Date:** 3/27/2013 **Drawn By:** SCD **Scale:**	**Figure 2** **Boring Location Map**

APPENDIX A

SOIL BORING LOGS

Professional Service Industries, Inc.
4421 Harrsion Street
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

LOG OF BORING GP-1

PSI Job No.: 0046517
Project: LNG Facility
Location: 4220 West 36th Street
Chicago, Illinois

Drilling Method: Direct push Methodology
Sampling Method: Geoprobe
Hammer Type:
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ (× Moisture, ◪ PL, ✚ LL; 0–25–50) / STRENGTH, tsf (▲ Qu, ✳ Qp; 0–2.0–4.0)	Additional Remarks
	0					Black to dark brown fine to coarse Sand with asphalt mix, some Silt, moist	FILL			
					45	Gray Silty Sand with Gravel, moist	FILL			PID=0.0 ppm
						Brown Silty Clay, some fine Sand, moist, stiff to hard	FILL			PID=0.0 ppm
						Brown Sand and Gravel with some Silt, moist	FILL			
	5									PID=0.0 ppm
					40	Brown Silty Sand, some Gravel, moist	FILL			
				GP-1						Sampled at 5.5' to 7.5'
						Black Sand and Gravel, trace Silt, Slag at 7.3', moist, slight odor	FILL			PID=0.0 ppm
						Boring Refusal at ~7.5'. No Measurable Groundwater Present				

Completion Depth: 7.5 ft
Date Boring Started: 3/18/13
Date Boring Completed: 3/18/13
Logged By: SD
Drilling Contractor: C.S. Drilling

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude:
Longitude:
Drill Rig: Geoprobe
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4421 Harrsion Street
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

LOG OF BORING GP-2

PSI Job No.: 0046517
Project: LNG Facility
Location: 4220 West 36th Street
Chicago, Illinois

Drilling Method: Direct push Methodology
Sampling Method: Geoprobe
Hammer Type:
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	Additional Remarks
	0					Dark brown to grey fine to medium Sand with Gravel, trace Silt, moist			
					45		FILL		PID=0.0 ppm
						Brown Silty clay with trace fine Sand, moist, stiff	FILL		PID=0.0 ppm
						Gravel, wet	FILL		
						Brown Silty Sand with some Gravel, trace Clay, moist			
	5			GP-2			FILL		PID=0.2 ppm Sampled at 4' to 6'
					39	Grayish brown Silty Clay, trace fine Sand, moist			PID=0.0 ppm
							CL		
						Gravel seam with trace sand, wet	GPS		
						Grayish brown Silty Clay, trace fine Sand, moist, stiff to very stiff			PID=0.0 ppm
	10				38		CL		
									PID=0.0 ppm
						End of boring at 12'. No Measurable Groundwater Present			

Completion Depth: 12.0 ft
Date Boring Started: 3/18/13
Date Boring Completed: 3/18/13
Logged By: SD
Drilling Contractor: C.S. Drilling

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude:
Longitude:
Drill Rig: Geoprobe
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4421 Harrsion Street
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

LOG OF BORING GP-3

PSI Job No.: 0046517
Project: LNG Facility
Location: 4220 West 36th Street
Chicago, Illinois

Drilling Method: Direct push Methodology
Sampling Method: Geoprobe
Hammer Type:
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	Additional Remarks
	0					Grayish brown fine to coarse Sand with gravel, trace Silt, moist	FILL		
					42	Dark brown Silty Sand with Gravel and trace Clay, moist	FILL		PID=0.1 ppm PID=0.0 ppm
	5				38	Black Silty Sand and Gravel with Slag, slight tar odor, moist	FILL		PID=0.1 ppm
				GP-3		Brown Silty Sand with Clay, stiff	SP-SC		Sampled at 5.5' to 7.5' PID=0.0 ppm
						Boring Refusal at ~7.5'. No Measurable Groundwater Present			

Completion Depth: 7.5 ft
Date Boring Started: 3/18/13
Date Boring Completed: 3/18/13
Logged By: SD
Drilling Contractor: C.S. Drilling

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude:
Longitude:
Drill Rig: Geoprobe
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4421 Harrsion Street
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

LOG OF BORING GP-4

PSI Job No.: 0046517
Project: LNG Facility
Location: 4220 West 36th Street
Chicago, Illinois

Drilling Method: Direct push Methodology
Sampling Method: Geoprobe
Hammer Type:
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ (× Moisture, ◪ PL, ✚ LL; 0–25–50) / STRENGTH, tsf (▲ Qu, ✳ Qp; 0–2.0–4.0)	Additional Remarks
	0					Tan to brown gravel with fine to coarse Sand, some Silt, wet	FILL			
						Brown to gray Silty Sand and Gravel, wet				
					40		FILL			PID=0.0 ppm
						Dark brown Silty Sand with Clay, moist	FILL			PID=0.0 ppm
						Grayish brown Silty Clay with trace Sand and Gravel, moist, stiff				
	5								✳	PID=0.1 ppm
					44		FILL			
				GP-4					✳	PID=0.1 ppm Sampled at 6' to 8'
						Brown coarse Sand with Silt, wet	FILL			
						Brown Silty Clay with trace Gravel, moist, firm to stiff			✳	
	10				35		CL			PID=0.0 ppm
									✳	
						End of boring at 12'. No Measurable Groundwater Present				

Completion Depth: 12.0 ft
Date Boring Started: 3/18/13
Date Boring Completed: 3/18/13
Logged By: SD
Drilling Contractor: C.S. Drilling

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude:
Longitude:
Drill Rig: Geoprobe
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4421 Harrsion Street
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

LOG OF BORING GP-5

PSI Job No.: 0046517
Project: LNG Facility
Location: 4220 West 36th Street
Chicago, Illinois

Drilling Method: Direct push Methodology
Sampling Method: Geoprobe
Hammer Type:
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	Additional Remarks
	0					Black to brown Gravel with fine to medium Sand, some Silt, moist	FILL		PID=0.1 ppm
					45	Gravel with some Silty Sand, moist to wet	FILL		
				GP-5		Brownish gray Silty Sand with Clay and trace Gravel, moist	FILL		Sampled at 2' to 4' PID=0.1 ppm
						Trace gravel from 4 to 4.8'			
	5					Blackish brown Silty Sand, some Gravel, moist. Slag encountered form 5.8 to 6.5'	FILL		PID=0.0 ppm
					42				
						Brownish gray Silty Clay with some fine Sand and Gravel, moist	CL	✳	PID=0.0 ppm
						Blackish brown Silty Sand, some Gravel, moist			PID=0.0 ppm
	10				20		SM		
						End of boring at 12'. No Measureable Groundwater Present			

Completion Depth: 12.0 ft
Date Boring Started: 3/18/13
Date Boring Completed: 3/18/13
Logged By: SD
Drilling Contractor: C.S. Drilling

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude:
Longitude:
Drill Rig: Geoprobe
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

APPENDIX B

STAT LABORATORY ANALYTICAL REPORT – MARCH 2013

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001;AIHA 101160; NVLAP LabCode 101202-

March 26, 2013

PSI
4421 W. Harrison St., Suite 510
Hillside, IL 60162
Telephone: (708) 236-0720
Fax: (708) 236-0721

RE: 0046517, LNG Facility, 4220 W. 36th Street STAT Project No 13030439

Dear Jeffrey Goeden:

STAT Analysis received 5 samples for the referenced project on 3/18/2013 4:03:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Kurt Clarkson

Kurt Clarkson
Senior Project Manager

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone.This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.

STAT Analysis Corporation

Date: March 26, 2013

Client: PSI
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab Order: 13030439

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
13030439-001A	GP-1 5.5-7.5		3/18/2013 9:12:00 AM	3/18/2013
13030439-001B	GP-1 5.5-7.5		3/18/2013 9:12:00 AM	3/18/2013
13030439-002A	GP-2 4.0-6.0		3/18/2013 10:35:00 AM	3/18/2013
13030439-002B	GP-2 4.0-6.0		3/18/2013 10:35:00 AM	3/18/2013
13030439-003A	GP-3 5.5-7.5		3/18/2013 10:56:00 AM	3/18/2013
13030439-003B	GP-3 5.5-7.5		3/18/2013 10:56:00 AM	3/18/2013
13030439-004A	GP-4 6.0-8.0		3/18/2013 11:08:00 AM	3/18/2013
13030439-004B	GP-4 6.0-8.0		3/18/2013 11:08:00 AM	3/18/2013
13030439-005A	GP-5 2.0-4.0		3/18/2013 11:25:00 AM	3/18/2013
13030439-005B	GP-5 2.0-4.0		3/18/2013 11:25:00 AM	3/18/2013

STAT Analysis Corporation

Date: *March 26, 2013*

CLIENT: PSI
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab Order: 13030439

CASE NARRATIVE

The VOC soil Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) analyzed 03/24/2013 had recovery of Bromomethane outside of control limits (42%/45% (LCS/LCSD) recovery, QC limits 70-130%).

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-001

Client Sample ID: GP-1 5.5-7.5
Collection Date 3/18/2013 9:12:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	**SW7471A**			Prep Date: **3/20/2013**		Analyst: **LB**
Mercury	0.13	0.023		mg/Kg-dry	1	3/20/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **3/19/2013**		Analyst: **JG**
Arsenic	12	1.2		mg/Kg-dry	10	3/19/2013
Barium	100	1.2		mg/Kg-dry	10	3/19/2013
Cadmium	ND	0.6		mg/Kg-dry	10	3/19/2013
Chromium	19	1.2		mg/Kg-dry	10	3/19/2013
Lead	62	0.6		mg/Kg-dry	10	3/19/2013
Selenium	ND	1.2		mg/Kg-dry	10	3/19/2013
Silver	ND	1.2		mg/Kg-dry	10	3/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **3/22/2013**		Analyst: **MEP**
Acenaphthene	4.6	0.04		mg/Kg-dry	1	3/22/2013
Acenaphthylene	44	0.4		mg/Kg-dry	10	3/26/2013
Anthracene	110	4		mg/Kg-dry	100	3/26/2013
Benz(a)anthracene	170	4		mg/Kg-dry	100	3/26/2013
Benzo(a)pyrene	130	4		mg/Kg-dry	100	3/26/2013
Benzo(b)fluoranthene	140	4		mg/Kg-dry	100	3/26/2013
Benzo(g,h,i)perylene	83	4		mg/Kg-dry	100	3/26/2013
Benzo(k)fluoranthene	120	4		mg/Kg-dry	100	3/26/2013
Chrysene	180	4		mg/Kg-dry	100	3/26/2013
Dibenz(a,h)anthracene	38	0.4		mg/Kg-dry	10	3/26/2013
Fluoranthene	500	7.9		mg/Kg-dry	200	3/26/2013
Fluorene	54	4		mg/Kg-dry	100	3/26/2013
Indeno(1,2,3-cd)pyrene	78	4		mg/Kg-dry	100	3/26/2013
Naphthalene	4.1	0.04		mg/Kg-dry	1	3/22/2013
Phenanthrene	270	4		mg/Kg-dry	100	3/26/2013
Pyrene	340	4		mg/Kg-dry	100	3/26/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Acetone	ND	0.11		mg/Kg-dry	1	3/24/2013
Benzene	ND	0.0073		mg/Kg-dry	1	3/24/2013
Bromodichloromethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
Bromoform	ND	0.0073		mg/Kg-dry	1	3/24/2013
Bromomethane	ND	0.015		mg/Kg-dry	1	3/24/2013
2-Butanone	ND	0.11		mg/Kg-dry	1	3/24/2013
Carbon disulfide	ND	0.073		mg/Kg-dry	1	3/24/2013
Carbon tetrachloride	ND	0.0073		mg/Kg-dry	1	3/24/2013
Chlorobenzene	ND	0.0073		mg/Kg-dry	1	3/24/2013
Chloroethane	ND	0.015		mg/Kg-dry	1	3/24/2013

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-001

Client Sample ID: GP-1 5.5-7.5
Collection Date 3/18/2013 9:12:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Chloroform	ND	0.0073		mg/Kg-dry	1	3/24/2013
Chloromethane	ND	0.015		mg/Kg-dry	1	3/24/2013
Dibromochloromethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,2-Dichloroethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethene	ND	0.0073		mg/Kg-dry	1	3/24/2013
cis-1,2-Dichloroethene	ND	0.0073		mg/Kg-dry	1	3/24/2013
trans-1,2-Dichloroethene	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,2-Dichloropropane	ND	0.0073		mg/Kg-dry	1	3/24/2013
cis-1,3-Dichloropropene	ND	0.0029		mg/Kg-dry	1	3/24/2013
trans-1,3-Dichloropropene	ND	0.0029		mg/Kg-dry	1	3/24/2013
Ethylbenzene	ND	0.0073		mg/Kg-dry	1	3/24/2013
2-Hexanone	ND	0.029		mg/Kg-dry	1	3/24/2013
4-Methyl-2-pentanone	ND	0.029		mg/Kg-dry	1	3/24/2013
Methylene chloride	ND	0.015		mg/Kg-dry	1	3/24/2013
Methyl tert-butyl ether	ND	0.0073		mg/Kg-dry	1	3/24/2013
Styrene	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,1,2,2-Tetrachloroethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
Tetrachloroethene	ND	0.0073		mg/Kg-dry	1	3/24/2013
Toluene	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,1,1-Trichloroethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
1,1,2-Trichloroethane	ND	0.0073		mg/Kg-dry	1	3/24/2013
Trichloroethene	ND	0.0073		mg/Kg-dry	1	3/24/2013
Vinyl chloride	ND	0.0073		mg/Kg-dry	1	3/24/2013
Xylenes, Total	ND	0.022		mg/Kg-dry	1	3/24/2013
pH (25 °C)	**SW9045C**			Prep Date: **3/19/2013**		Analyst: **MNG**
pH	7.3			pH Units	1	3/19/2013
Percent Moisture	**D2974**			Prep Date: **3/20/2013**		Analyst: **PBG**
Percent Moisture	17.7	0.2	*	wt%	1	3/20/2013

Qualifiers:

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-002

Client Sample ID: GP-2 4.0-6.0
Collection Date 3/18/2013 10:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	**SW7471A**			Prep Date: **3/21/2013**		Analyst: **LB**
Mercury	0.38	0.022		mg/Kg-dry	1	3/22/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **3/19/2013**		Analyst: **JG**
Arsenic	22	0.99		mg/Kg-dry	10	3/19/2013
Barium	76	0.99		mg/Kg-dry	10	3/19/2013
Cadmium	0.72	0.49		mg/Kg-dry	10	3/19/2013
Chromium	19	0.99		mg/Kg-dry	10	3/19/2013
Lead	130	0.49		mg/Kg-dry	10	3/19/2013
Selenium	1.7	0.99		mg/Kg-dry	10	3/19/2013
Silver	ND	0.99		mg/Kg-dry	10	3/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **3/22/2013**		Analyst: **MEP**
Acenaphthene	0.37	0.037		mg/Kg-dry	1	3/22/2013
Acenaphthylene	3.4	0.037		mg/Kg-dry	1	3/22/2013
Anthracene	5.9	0.37		mg/Kg-dry	10	3/26/2013
Benz(a)anthracene	13	0.37		mg/Kg-dry	10	3/26/2013
Benzo(a)pyrene	11	0.37		mg/Kg-dry	10	3/26/2013
Benzo(b)fluoranthene	11	0.37		mg/Kg-dry	10	3/26/2013
Benzo(g,h,i)perylene	6.6	0.37		mg/Kg-dry	10	3/26/2013
Benzo(k)fluoranthene	10	0.37		mg/Kg-dry	10	3/26/2013
Chrysene	13	0.37		mg/Kg-dry	10	3/26/2013
Dibenz(a,h)anthracene	0.62	0.037		mg/Kg-dry	1	3/22/2013
Fluoranthene	28	0.37		mg/Kg-dry	10	3/26/2013
Fluorene	3	0.037		mg/Kg-dry	1	3/22/2013
Indeno(1,2,3-cd)pyrene	6.1	0.37		mg/Kg-dry	10	3/26/2013
Naphthalene	0.48	0.37		mg/Kg-dry	10	3/26/2013
Phenanthrene	18	0.37		mg/Kg-dry	10	3/26/2013
Pyrene	21	0.37		mg/Kg-dry	10	3/26/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Acetone	ND	0.084		mg/Kg-dry	1	3/24/2013
Benzene	ND	0.0056		mg/Kg-dry	1	3/24/2013
Bromodichloromethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
Bromoform	ND	0.0056		mg/Kg-dry	1	3/24/2013
Bromomethane	ND	0.011		mg/Kg-dry	1	3/24/2013
2-Butanone	ND	0.084		mg/Kg-dry	1	3/24/2013
Carbon disulfide	ND	0.056		mg/Kg-dry	1	3/24/2013
Carbon tetrachloride	ND	0.0056		mg/Kg-dry	1	3/24/2013
Chlorobenzene	ND	0.0056		mg/Kg-dry	1	3/24/2013
Chloroethane	ND	0.011		mg/Kg-dry	1	3/24/2013

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Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-002

Client Sample ID: GP-2 4.0-6.0
Collection Date 3/18/2013 10:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Chloroform	ND	0.0056		mg/Kg-dry	1	3/24/2013
Chloromethane	ND	0.011		mg/Kg-dry	1	3/24/2013
Dibromochloromethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,2-Dichloroethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethene	ND	0.0056		mg/Kg-dry	1	3/24/2013
cis-1,2-Dichloroethene	ND	0.0056		mg/Kg-dry	1	3/24/2013
trans-1,2-Dichloroethene	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,2-Dichloropropane	ND	0.0056		mg/Kg-dry	1	3/24/2013
cis-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	3/24/2013
trans-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	3/24/2013
Ethylbenzene	ND	0.0056		mg/Kg-dry	1	3/24/2013
2-Hexanone	ND	0.022		mg/Kg-dry	1	3/24/2013
4-Methyl-2-pentanone	ND	0.022		mg/Kg-dry	1	3/24/2013
Methylene chloride	ND	0.011		mg/Kg-dry	1	3/24/2013
Methyl tert-butyl ether	ND	0.0056		mg/Kg-dry	1	3/24/2013
Styrene	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,1,2,2-Tetrachloroethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
Tetrachloroethene	ND	0.0056		mg/Kg-dry	1	3/24/2013
Toluene	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,1,1-Trichloroethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
1,1,2-Trichloroethane	ND	0.0056		mg/Kg-dry	1	3/24/2013
Trichloroethene	ND	0.0056		mg/Kg-dry	1	3/24/2013
Vinyl chloride	ND	0.0056		mg/Kg-dry	1	3/24/2013
Xylenes, Total	ND	0.017		mg/Kg-dry	1	3/24/2013
pH (25 °C)	**SW9045C**			Prep Date: **3/19/2013**		Analyst: **MNG**
pH	7.9			pH Units	1	3/19/2013
Percent Moisture	**D2974**			Prep Date: **3/20/2013**		Analyst: **PBG**
Percent Moisture	12.7	0.2	*	wt%	1	3/20/2013

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Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-003

Client Sample ID: GP-3 5.5-7.5
Collection Date 3/18/2013 10:56:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	**SW7471A**			Prep Date: **3/20/2013**		Analyst: **LB**
Mercury	0.036	0.023		mg/Kg-dry	1	3/20/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **3/19/2013**		Analyst: **JG**
Arsenic	10	1.2		mg/Kg-dry	10	3/19/2013
Barium	63	1.2		mg/Kg-dry	10	3/19/2013
Cadmium	ND	0.61		mg/Kg-dry	10	3/19/2013
Chromium	20	1.2		mg/Kg-dry	10	3/19/2013
Lead	46	0.61		mg/Kg-dry	10	3/19/2013
Selenium	1.6	1.2		mg/Kg-dry	10	3/19/2013
Silver	ND	1.2		mg/Kg-dry	10	3/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **3/22/2013**		Analyst: **MEP**
Acenaphthene	0.098	0.039		mg/Kg-dry	1	3/22/2013
Acenaphthylene	0.59	0.039		mg/Kg-dry	1	3/22/2013
Anthracene	0.69	0.039		mg/Kg-dry	1	3/22/2013
Benz(a)anthracene	1.6	0.039		mg/Kg-dry	1	3/22/2013
Benzo(a)pyrene	1.2	0.039		mg/Kg-dry	1	3/22/2013
Benzo(b)fluoranthene	1.2	0.039		mg/Kg-dry	1	3/22/2013
Benzo(g,h,i)perylene	0.73	0.039		mg/Kg-dry	1	3/22/2013
Benzo(k)fluoranthene	1.2	0.039		mg/Kg-dry	1	3/22/2013
Chrysene	1.7	0.039		mg/Kg-dry	1	3/22/2013
Dibenz(a,h)anthracene	0.29	0.039		mg/Kg-dry	1	3/22/2013
Fluoranthene	3.2	0.039		mg/Kg-dry	1	3/22/2013
Fluorene	0.45	0.039		mg/Kg-dry	1	3/22/2013
Indeno(1,2,3-cd)pyrene	0.67	0.039		mg/Kg-dry	1	3/22/2013
Naphthalene	0.62	0.039		mg/Kg-dry	1	3/22/2013
Phenanthrene	2.1	0.039		mg/Kg-dry	1	3/22/2013
Pyrene	2.6	0.039		mg/Kg-dry	1	3/22/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Acetone	ND	0.069		mg/Kg-dry	1	3/24/2013
Benzene	ND	0.0046		mg/Kg-dry	1	3/24/2013
Bromodichloromethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
Bromoform	ND	0.0046		mg/Kg-dry	1	3/24/2013
Bromomethane	ND	0.0091		mg/Kg-dry	1	3/24/2013
2-Butanone	ND	0.069		mg/Kg-dry	1	3/24/2013
Carbon disulfide	ND	0.046		mg/Kg-dry	1	3/24/2013
Carbon tetrachloride	ND	0.0046		mg/Kg-dry	1	3/24/2013
Chlorobenzene	ND	0.0046		mg/Kg-dry	1	3/24/2013
Chloroethane	ND	0.0091		mg/Kg-dry	1	3/24/2013

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Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-003

Client Sample ID: GP-3 5.5-7.5
Collection Date 3/18/2013 10:56:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Chloroform	ND	0.0046		mg/Kg-dry	1	3/24/2013
Chloromethane	ND	0.0091		mg/Kg-dry	1	3/24/2013
Dibromochloromethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,2-Dichloroethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethene	ND	0.0046		mg/Kg-dry	1	3/24/2013
cis-1,2-Dichloroethene	ND	0.0046		mg/Kg-dry	1	3/24/2013
trans-1,2-Dichloroethene	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,2-Dichloropropane	ND	0.0046		mg/Kg-dry	1	3/24/2013
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	3/24/2013
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	3/24/2013
Ethylbenzene	ND	0.0046		mg/Kg-dry	1	3/24/2013
2-Hexanone	ND	0.018		mg/Kg-dry	1	3/24/2013
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	3/24/2013
Methylene chloride	ND	0.0091		mg/Kg-dry	1	3/24/2013
Methyl tert-butyl ether	ND	0.0046		mg/Kg-dry	1	3/24/2013
Styrene	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,1,2,2-Tetrachloroethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
Tetrachloroethene	ND	0.0046		mg/Kg-dry	1	3/24/2013
Toluene	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,1,1-Trichloroethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
1,1,2-Trichloroethane	ND	0.0046		mg/Kg-dry	1	3/24/2013
Trichloroethene	ND	0.0046		mg/Kg-dry	1	3/24/2013
Vinyl chloride	ND	0.0046		mg/Kg-dry	1	3/24/2013
Xylenes, Total	ND	0.014		mg/Kg-dry	1	3/24/2013
pH (25 °C)	**SW9045C**			Prep Date: **3/19/2013**		Analyst: **MNG**
pH	7.7			pH Units	1	3/19/2013
Percent Moisture	**D2974**			Prep Date: **3/20/2013**		Analyst: **PBG**
Percent Moisture	16.0	0.2	*	wt%	1	3/20/2013

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Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-004

Client Sample ID: GP-4 6.0-8.0
Collection Date 3/18/2013 11:08:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	**SW7471A**			Prep Date: **3/20/2013**		Analyst: **LB**
Mercury	0.11	0.022		mg/Kg-dry	1	3/20/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **3/19/2013**		Analyst: **JG**
Arsenic	10	1.2		mg/Kg-dry	10	3/19/2013
Barium	67	1.2		mg/Kg-dry	10	3/19/2013
Cadmium	ND	0.58		mg/Kg-dry	10	3/19/2013
Chromium	19	1.2		mg/Kg-dry	10	3/19/2013
Lead	33	0.58		mg/Kg-dry	10	3/19/2013
Selenium	1.5	1.2		mg/Kg-dry	10	3/19/2013
Silver	ND	1.2		mg/Kg-dry	10	3/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **3/22/2013**		Analyst: **MEP**
Acenaphthene	0.041	0.039		mg/Kg-dry	1	3/22/2013
Acenaphthylene	0.18	0.039		mg/Kg-dry	1	3/22/2013
Anthracene	0.28	0.039		mg/Kg-dry	1	3/22/2013
Benz(a)anthracene	0.79	0.039		mg/Kg-dry	1	3/22/2013
Benzo(a)pyrene	0.66	0.039		mg/Kg-dry	1	3/22/2013
Benzo(b)fluoranthene	0.6	0.039		mg/Kg-dry	1	3/22/2013
Benzo(g,h,i)perylene	0.41	0.039		mg/Kg-dry	1	3/22/2013
Benzo(k)fluoranthene	0.6	0.039		mg/Kg-dry	1	3/22/2013
Chrysene	0.82	0.039		mg/Kg-dry	1	3/22/2013
Dibenz(a,h)anthracene	0.15	0.039		mg/Kg-dry	1	3/22/2013
Fluoranthene	1.5	0.039		mg/Kg-dry	1	3/22/2013
Fluorene	0.16	0.039		mg/Kg-dry	1	3/22/2013
Indeno(1,2,3-cd)pyrene	0.35	0.039		mg/Kg-dry	1	3/22/2013
Naphthalene	0.057	0.039		mg/Kg-dry	1	3/22/2013
Phenanthrene	0.92	0.039		mg/Kg-dry	1	3/22/2013
Pyrene	1.3	0.039		mg/Kg-dry	1	3/22/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Acetone	ND	0.066		mg/Kg-dry	1	3/24/2013
Benzene	ND	0.0044		mg/Kg-dry	1	3/24/2013
Bromodichloromethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
Bromoform	ND	0.0044		mg/Kg-dry	1	3/24/2013
Bromomethane	ND	0.0089		mg/Kg-dry	1	3/24/2013
2-Butanone	ND	0.066		mg/Kg-dry	1	3/24/2013
Carbon disulfide	ND	0.044		mg/Kg-dry	1	3/24/2013
Carbon tetrachloride	ND	0.0044		mg/Kg-dry	1	3/24/2013
Chlorobenzene	ND	0.0044		mg/Kg-dry	1	3/24/2013
Chloroethane	ND	0.0089		mg/Kg-dry	1	3/24/2013

Qualifiers:
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Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-004

Client Sample ID: GP-4 6.0-8.0
Collection Date 3/18/2013 11:08:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Chloroform	ND	0.0044		mg/Kg-dry	1	3/24/2013
Chloromethane	ND	0.0089		mg/Kg-dry	1	3/24/2013
Dibromochloromethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,2-Dichloroethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethene	ND	0.0044		mg/Kg-dry	1	3/24/2013
cis-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	3/24/2013
trans-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,2-Dichloropropane	ND	0.0044		mg/Kg-dry	1	3/24/2013
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	3/24/2013
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	3/24/2013
Ethylbenzene	ND	0.0044		mg/Kg-dry	1	3/24/2013
2-Hexanone	ND	0.018		mg/Kg-dry	1	3/24/2013
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	3/24/2013
Methylene chloride	ND	0.0089		mg/Kg-dry	1	3/24/2013
Methyl tert-butyl ether	ND	0.0044		mg/Kg-dry	1	3/24/2013
Styrene	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,1,2,2-Tetrachloroethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
Tetrachloroethene	ND	0.0044		mg/Kg-dry	1	3/24/2013
Toluene	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,1,1-Trichloroethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
1,1,2-Trichloroethane	ND	0.0044		mg/Kg-dry	1	3/24/2013
Trichloroethene	ND	0.0044		mg/Kg-dry	1	3/24/2013
Vinyl chloride	ND	0.0044		mg/Kg-dry	1	3/24/2013
Xylenes, Total	ND	0.013		mg/Kg-dry	1	3/24/2013
pH (25 °C)	**SW9045C**			Prep Date: **3/19/2013**		Analyst: **MNG**
pH	8.0			pH Units	1	3/19/2013
Percent Moisture	**D2974**			Prep Date: **3/20/2013**		Analyst: **PBG**
Percent Moisture	17.4	0.2	*	wt%	1	3/20/2013

Qualifiers:

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Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: March 26, 2013
Date Printed: March 26, 2013

Client: PSI
Lab Order: 13030439
Project: 0046517, LNG Facility, 4220 W. 36th Street
Lab ID: 13030439-005

Client Sample ID: GP-5 2.0-4.0
Collection Date 3/18/2013 11:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	**SW7471A**			Prep Date: **3/20/2013**		Analyst: **LB**
Mercury	ND	0.022		mg/Kg-dry	1	3/20/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **3/19/2013**		Analyst: **JG**
Arsenic	8.7	1.2		mg/Kg-dry	10	3/19/2013
Barium	73	1.2		mg/Kg-dry	10	3/19/2013
Cadmium	ND	0.6		mg/Kg-dry	10	3/19/2013
Chromium	22	1.2		mg/Kg-dry	10	3/19/2013
Lead	21	0.6		mg/Kg-dry	10	3/19/2013
Selenium	ND	1.2		mg/Kg-dry	10	3/19/2013
Silver	ND	1.2		mg/Kg-dry	10	3/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **3/22/2013**		Analyst: **MEP**
Acenaphthene	0.1	0.039		mg/Kg-dry	1	3/22/2013
Acenaphthylene	0.64	0.039		mg/Kg-dry	1	3/22/2013
Anthracene	1	0.039		mg/Kg-dry	1	3/22/2013
Benz(a)anthracene	2.3	0.039		mg/Kg-dry	1	3/22/2013
Benzo(a)pyrene	1.8	0.039		mg/Kg-dry	1	3/22/2013
Benzo(b)fluoranthene	1.9	0.039		mg/Kg-dry	1	3/22/2013
Benzo(g,h,i)perylene	1.1	0.039		mg/Kg-dry	1	3/22/2013
Benzo(k)fluoranthene	1.5	0.039		mg/Kg-dry	1	3/22/2013
Chrysene	2.3	0.039		mg/Kg-dry	1	3/22/2013
Dibenz(a,h)anthracene	0.4	0.039		mg/Kg-dry	1	3/22/2013
Fluoranthene	5.8	0.39		mg/Kg-dry	10	3/26/2013
Fluorene	0.53	0.039		mg/Kg-dry	1	3/22/2013
Indeno(1,2,3-cd)pyrene	0.99	0.039		mg/Kg-dry	1	3/22/2013
Naphthalene	0.1	0.039		mg/Kg-dry	1	3/22/2013
Phenanthrene	3.6	0.039		mg/Kg-dry	1	3/22/2013
Pyrene	3.8	0.039		mg/Kg-dry	1	3/22/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Acetone	ND	0.071		mg/Kg-dry	1	3/24/2013
Benzene	ND	0.0048		mg/Kg-dry	1	3/24/2013
Bromodichloromethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
Bromoform	ND	0.0048		mg/Kg-dry	1	3/24/2013
Bromomethane	ND	0.0095		mg/Kg-dry	1	3/24/2013
2-Butanone	ND	0.071		mg/Kg-dry	1	3/24/2013
Carbon disulfide	ND	0.048		mg/Kg-dry	1	3/24/2013
Carbon tetrachloride	ND	0.0048		mg/Kg-dry	1	3/24/2013
Chlorobenzene	ND	0.0048		mg/Kg-dry	1	3/24/2013
Chloroethane	ND	0.0095		mg/Kg-dry	1	3/24/2013

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Lab ID: 13030439-005

Client Sample ID: GP-5 2.0-4.0
Collection Date 3/18/2013 11:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **3/19/2013**		Analyst: **PS**
Chloroform	ND	0.0048		mg/Kg-dry	1	3/24/2013
Chloromethane	ND	0.0095		mg/Kg-dry	1	3/24/2013
Dibromochloromethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,2-Dichloroethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,1-Dichloroethene	ND	0.0048		mg/Kg-dry	1	3/24/2013
cis-1,2-Dichloroethene	ND	0.0048		mg/Kg-dry	1	3/24/2013
trans-1,2-Dichloroethene	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,2-Dichloropropane	ND	0.0048		mg/Kg-dry	1	3/24/2013
cis-1,3-Dichloropropene	ND	0.0019		mg/Kg-dry	1	3/24/2013
trans-1,3-Dichloropropene	ND	0.0019		mg/Kg-dry	1	3/24/2013
Ethylbenzene	ND	0.0048		mg/Kg-dry	1	3/24/2013
2-Hexanone	ND	0.019		mg/Kg-dry	1	3/24/2013
4-Methyl-2-pentanone	ND	0.019		mg/Kg-dry	1	3/24/2013
Methylene chloride	ND	0.0095		mg/Kg-dry	1	3/24/2013
Methyl tert-butyl ether	ND	0.0048		mg/Kg-dry	1	3/24/2013
Styrene	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,1,2,2-Tetrachloroethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
Tetrachloroethene	ND	0.0048		mg/Kg-dry	1	3/24/2013
Toluene	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,1,1-Trichloroethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
1,1,2-Trichloroethane	ND	0.0048		mg/Kg-dry	1	3/24/2013
Trichloroethene	ND	0.0048		mg/Kg-dry	1	3/24/2013
Vinyl chloride	ND	0.0048		mg/Kg-dry	1	3/24/2013
Xylenes, Total	ND	0.014		mg/Kg-dry	1	3/24/2013
pH (25 °C)	**SW9045C**			Prep Date: **3/19/2013**		Analyst: **MNG**
pH	8.2			pH Units	1	3/19/2013
Percent Moisture	**D2974**			Prep Date: **3/20/2013**		Analyst: **PBG**
Percent Moisture	16.7	0.2	*	wt%	1	3/20/2013

Qualifiers:

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CHAIN OF CUSTODY RECORD

Nº: 847540 **Page :** ____ **of** ____

Company: Professional Service Industries, Inc. (PSI)
Project Number: CC46517 Client Tracking No.:
Project Name: LNG Facility
Project Location: 4220 W. 36th Street
Sampler(s): Shawn Davico
Report To: Phone: (708) 236-0720
Fax:
QC Level: 1 ____ 2 ____ 3 ____ 4 ____ e-mail: shawn.davico@psiusa.com

P.O. No.:
Quote No.:

Turn Around: Standard → 5 day
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOCs method SC35/8260	PNAs method 8270	RCRA 8 metals method 6020/7470/7471A	PH method 9045C/150.1	Remarks	Lab No.:
GP-1 5.5-7.5	3/18/13	9:12	SOIL				4	X	X	X	X		001
GP-2 4.0-6.0	3/18/13	10:35	SOIL				4	X	X	X	X		002
GP-3 5.5-7.5	3/18/13	10:56	SOIL				4	X	X	X	X		003
GP-4 6.0-8.0	3/18/13	11:08	SOIL				4	X	X	X	X		004
GP-5 2.0-4.0	3/18/13	11:25	SOIL				4	X	X	X	X		005

Relinquished by: (Signature) [signature] Date/Time: 3/18/13 2:51
Received by: (Signature) [signature] Date/Time: 3/18/13 2:51
Relinquished by: (Signature) [signature] Date/Time: 3/18/13 4:03
Received by: (Signature) [signature] Date/Time: 3/18/13 1603
Relinquished by: (Signature) Date/Time:
Received by: (Signature) Date/Time:

Comments:

Preservation Code: A = None B = HNO_3 C = NaOH D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 13030439

Received on Ice: Yes [X] No [ ]

Temperature: 2.1 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name PSI

Date and Time Received: 3/18/2013 4:03:00 PM

Work Order Number 13030439

Received by: TJW

Checklist completed by: Signature 3/18/13 Date

Reviewed by: Initials 3/18/13 Date

Matrix: Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 2.1 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: Date contacted: Contacted by:

Response:

APPENDIX A6

ECOLOGICAL SURVEY DATA

CHECKLIST FOR ECOLOGICAL ASSESSMENT/SAMPLING

I. SITE DESCRIPTION

1. Site Name: Former Crawford Station Manufactured Gas Plant (MGP)

   Location: 3500 South Pulaski Road within Section 34, Township 39 North, Range 13 East

   County: Cook City: Chicago State: Illinois

2. Latitude: 41° 49' 43" Longitude: 87° 43' 53"

3. What is the approximate area of the site? Approximately 260 acres

4. Is this the first site visit? ✓ yes ☐ no. If no, attach trip report of previous site visit(s), if available.

   Date(s) of previous site visit(s): _____

5. Please attach to the checklist USGS topographic map(s) of the site, if available.

   Not provided.

6. Are aerial or other site photographs available? ✓ yes ☐ no. If yes, please attach any available photo(s) to the site map at the conclusion of this section.

   See attached photograph log sheets.

7. The land use on the site is:

0	% Urban
0	% Rural
0	% Residential
100	% Industrial (✓ light ✓heavy)
0	% Agricultural
(*Crops*: None)	
0	% Recreational
(Describe; note if it is a park, etc.)	
0	% Undisturbed
0	% Other (vacant / abandoned)

The area surrounding the site is: 0.2 mile radius

0	% Urban
0	% Rural
10	% Residential
85	% Industrial (☐ light ✓ heavy)
0	% Agricultural
(*Crops*: None)	
5	% Recreational
(Describe; note if it is a park, etc.)	
Piotrowski Park is located to north of site	
0	% Undisturbed
0	% Other

8. Has any movement of soil taken place at the site? ✓ yes ☐ no. If yes, please identify the most likely cause of this disturbance:

_____	Agricultural Use	X	Heavy Equipment	_____	Mining
_____	Natural Events	_____	Erosion	X	Other

Please describe: Site was historically filled and is covered with gravel and pavement over most of the surface. Land use is industrial in nature and a portion of the site is undergoing active remediation to remove contaminated soils and source materials (i.e., coal tar).

9. Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site, e.g., Federal and State parks, National and State monuments, wetlands, prairie potholes? *Remember, flood plains and wetlands are not always obvious; do not answer "no" without confirming information.*

No sensitive areas exist on the site or adjacent to the site. The site is located in an urban area of the City of Chicago adjacent to the Chicago Sanitary and Ship Canal, which is a manmade structure.

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.

General observation made on July 19, 2011, and supplemented with aerial coverage from Google Earth.

10. What type of facility is located at the site?

☐ Chemical ☐ Manufacturing ☐ Mixing ☐ Waste disposal

✓ Other (specify): Truck storage yards, truck repair facilities, cold storage facility, electrical substation, natural gas facility, vacant land, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) facilities, and railroad spur.

11. What are the suspected contaminants of concern at the site? If known, what are the maximum concentration levels?

Chemical constituents of potential concern (COPCs) at the site include benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), and selected metals detected in soil, sediment, and groundwater samples. Refer to the details provided in the site-specific work plan (SSWP) and Completion Report.

12. Check any potential routes of off-site migration of contaminants observed at the site:

☐ Swales ☐ Depressions ☐ Drainage ditches

☐ Runoff ☐ Windblown particulates ☐ Vehicular traffic

✓ Other (specify): No potential routes of offsite migration observed onsite. Based on information in the Completion Report, most surface water drainage is directed to storm sewers that convey surface water to a deep tunnel system. Surface water not captured by storm sewers is expected to either infiltrate or drain to the Chicago Sanitary and Ship Canal located adjacent to the site to the south.

13. If known, what is the approximate depth to the water table? Depth to groundwater is not well defined; perched groundwater may be present seasonally in fill material which is present in thickness from 1 to 14 ft across the site depending upon the area. Depth to perched groundwater depends on thickness of fill and underlying clay till and has been reported to be variable in depth between 0.55 ft and 9.20 ft (see Completion Report).

14. Is the direction of surface runoff apparent from site observations? ✓ yes ☐ no. If yes, to which of the following does the surface runoff discharge: Indicate all that apply.

✓ Surface water ☐ Groundwater ✓ Sewer ☐ Collection impoundment

15. Is there a navigable waterbody or tributary to a navigable waterbody? ✓ yes ☐ no.

16. Is there a waterbody anywhere on or in the vicinity of the site? If yes, also complete Section III: Aquatic Habitat Checklist - Non-Flowing Systems and/or Section IV: Aquatic Habitat Checklist - Flowing Systems.

✓ yes (Chicago Sanitary and Ship Canal) ☐ no

17. Is there evidence of flooding? ☐ yes ✓ no. *Wetlands and flood plains are not always obvious; do not answer "no" without confirming information.* If yes, complete Section V: Wetland Habitat Checklist.

18. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. (Use a blank sheet if additional space is needed for text.)

Site is completely developed with limited vegetation present onsite.

19. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site? ☐ yes ✓ no. *If yes, you are required to verify this information with the U.S. Fish and Wildlife Service.* If species' identities are known, please list them next.

Site is completely developed with no natural areas that could provide habitat for threatened and/or endangered species.

20. Record weather conditions at the time this checklist was prepared:

DATE: July 19, 2011

90°F Temperature (°C/°F) 85 °F Normal daily high temperature

Light and variable 0–5 mph Wind (direction/speed) None Precipitation (rain, snow)

Mostly sunny Cloud cover

IA. SUMMARY OF OBSERVATIONS AND SITE SETTING

On July 19, 2011, an Exponent environmental biologist conducted a habitat assessment of portions of the active urban upland portion of the Site. The Site is approximately 260 acres and consists of 21 parcels, designated as Parcels A through U. For purposes of phasing the remedial investigation (refer to Figure 1), the parcels have been divided into four groups (I, II, III, and IV). Within the Group I, II, and III parcels, there are virtually no ecological habitats because of the extensive urban development. The Group IV parcels include the Chicago Sanitary and Ship Canal, which was not observed during the site reconnaissance, but would be expected to include some ecological habitat due to the presence of the canal.

Observations were made during a driving survey primarily of the properties within the Group I parcels of the site for which there was access on the day of the site visit. Group I parcels Q and U are composed mainly of the Commonwealth Edison (ComEd) substation and Parcel O is the Peoples Gas Crawford Station Facility (refer to Figure 1 for Group I area). The Group I site area is composed of parcels that are developed and the ground surface is primarily covered with gravel and pavement with limited vegetation other than maintained grass lawn, and scattered patches of trees growing on the property (refer to attached Figure 2). The majority of the patches of trees located in the Group I investigation area have been removed as part of a time critical removal action at the Site. There are no natural areas within the Group I area that would afford ecological habitat.

As depicted in Figure 2, the majority of the Group II and III parcels are composed of truck storage areas covered by pavement, gravel, buildings, or equipment. There are no natural areas on these parcels that would provide ecological habitat.

The Group IV parcels consist of a truck storage area, a small portion of the railroad right-of-way that runs along the western boundary of the site, the MWRDGC property, and a portion of the Chicago Sanitary and Ship Canal located south of the MWRDGC property (refer to Figure 1). There is a small, approximately 2 acres, grove of deciduous trees on the MWRDGC property located adjacent to the canal (refer to Figure 2). A habitat assessment of this area and the Chicago Sanitary and Ship Canal area could not be completed during this initial visit because of access restrictions. Additional reconnaissance will be completed to make observations of this portion of the Group IV area during one of the early phases of the remedial investigation. Information provided in the Completion Report about the Group IV parcels was used to fill out the checklist for the time being.

Completed by: Michael W. Kierski Affiliation: Exponent

Additional Preparers _____

Site Manager_____

Date: July 19, 2011

II. TERRESTRIAL HABITAT CHECKLIST

IIA. WOODED

1. Are there any wooded areas at the site? ✓yes ☐ no. If no, go to Section IIB: Shrub/Scrub.

2. What percentage or area of the site is wooded? (1%; approximately 3 acres). Indicate the wooded area on the site map which is attached to a copy of this checklist. Please identify what information was used to determine the wooded area of the site.

3. What is the dominant type of vegetation in the wooded area? (Circle one: Evergreen/Deciduous/Mixed) Provide a photograph, if available.

   Dominant plant, if known: Deciduous vegetation; observation of the Group IV parcels where the wooded area is located will be made during an early phase of the investigation when observations of the canal are made (see Figure 2).

4. What is the predominant size of the trees at the site? Use diameter at breast height.

   ☐ 0-6 in. ☐ 6-12 in. ☐ >12 in.

5. Specify type of understory present, if known. Provide a photograph, if available.

   _____

IIB. SHRUB/SCRUB

1. Is shrub/scrub vegetation present at the site? ☐ yes ✓no. If no, go to Section IIC: Open Field.

2. What percentage of the site is covered by scrub/shrub vegetation? (0.0% 0.0 acres). Indicate the areas of shrub/scrub on the site map. Please identify what information was used to determine this area.

3. What is the dominant type of scrub/shrub vegetation, if known? Provide a photograph, if available.

4. What is the approximate average height of the scrub/shrub vegetation?

   ☐ 0-2 ft. ☐ 2-5 ft. ☐ >5 ft.

5. Based on site observations, how dense is the scrub/shrub vegetation?

   ☐ Dense ☐ Patchy ☐ Sparse

IIC. OPEN FIELD

1. Are there open (bare, barren) field areas present at the site? ✓yes ☐ no. If yes, please indicate the type below:

   ☐ Prairie/plains ☐ Savannah ☐ Old field ✓ Other (specify) Open maintained grass lawn on portions on the Peoples Gas Crawford Station Facility and MWRDGC properties (see Figure 2).

2. What percentage of the site is open field? (Approximately 15 %; 40 acres). Indicate the open field on the site map.

3. What is/are the dominant plant(s)? Provide a photograph, if available.

4. What is the approximate average height of the dominant plant? Maintained mowed grass areas

5. Describe the vegetation cover: ✓ Dense ☐ Sparse ☐ Patchy

IID. MISCELLANEOUS

1. Are other types of terrestrial habitats present at the site, other than woods, scrub/shrub, and open field?
   ☐ yes ✓ no. If yes, identify and describe them below.

   _____

2. Describe the terrestrial miscellaneous habitat(s) and identify these area(s) on the site map.

3. What observations, if any, were made at the site regarding the presence and/or absence of insects, fish, birds, mammals, etc.?

4. Review the questions in Section I to determine if any additional habitat checklists should be completed for this site.

III. AQUATIC HABITAT CHECKLIST – NON-FLOWING SYSTEMS

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section V, Wetland Habitat Checklist.

1. What type of open-water, non-flowing system is present at the site? Not applicable

   ☐ Natural (pond, lake)

   ☐ Artificially created (lagoon, reservoir, canal, impoundment)

2. If known, what is the name(s) of the waterbody(ies) on or adjacent to the site?

   _____

3. If a waterbody is present, what are its known uses (e.g.: recreation, navigation, etc.)?

4. What is the approximate size of the waterbody(ies)? _____acre(s).

5. Is any aquatic vegetation present? ☐ yes ☐ no. If yes, please identify the type of vegetation present is known.

   ☐ Emergent ☐ Submergent ☐ Floating

6. If known, what is the dept of the water? _____

7. What is the general composition of the substrate? Check all that apply.

   ☐ Bedrock ☐ Sand (coarse) ☐ Muck (fine/black)

   ☐ Boulder (> 10 in.) ☐ Silt (fine) ☐ Debris

   ☐ Cobble (2.5–10 in.) ☐ Marl (shells) ☐ Detritus

   ☐ Gravel (0.1–2.5 in.) ☐ Clay (slick) ☐ Concrete

   ☐ Other (specify) _____

8. What is the source of water in the waterbody?

   ☐ River/Stream/Creek ☐ Groundwater ☐ Other (specify)_____

   ☐ Industrial discharge ☐ Surface runoff

9. Is there a discharge from the site to the waterbody? ☐ yes ☐ no. If yes, please describe this discharge and its path.

10. Is there a discharge from the waterbody? ☐ yes ☐ no. If yes, and the information is available, identify from the list below the environment into which the waterbody discharges.

☐ River/Steam/Creek	☐ Onsite	☐ Offsite	Distance _____
☐ Groundwater	☐ Onsite	☐ Offsite	
☐ Wetlands	☐ Onsite	☐ Offsite	Distance _____
☐ Impoundment	☐ Onsite	☐ Offsite	

11. Identify any field measurements and observations of water quality that were made. For those parameters for which data were collected provide the measurement and the units of measure below:

_____ Area

_____ Depth (average)

_____ Temperature (depth of the water at which the reading was taken) _____

_____ pH

_____ Dissolved oxygen

_____ Salinity

_____ Turbidity (clear, slightly turbid, turbid, opaque) (Secchi disk depth _____, visual)

_____ Other (specify)

12. Describe observed color and area of coloration.

13. Mark the open-water, non-flowing system on the site map attached to his checklist.

14. What observations, if any, were made at the waterbody regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc.?

IV. AQUATIC HABITAT CHECKLIST – FLOWING SYSTEMS

Note: Aquatic systems are often associated with wetland habitats. Please refer to Section 4, Wetland Habitat Checklists.

1. What type(s) of flowing water system(s) is (are) present at the site?

☐ River ☐ Stream ☐ Creek

☐ Dry wash ☐ Arroyo ☐ Brook

✓ Artificially created (ditch, etc.) ☐ Intermittent Stream ☐ Channeling

☐ Other (specify) _____

2. If known, what is the name of the waterbody? Chicago Sanitary and Ship Canal; observations of the canal were not made on the day of the initial site visit. Observations of the canal will be made during one of the early phases of the remedial investigation. Conditions provided in this check list are based on information provided in the Completion Report.

3. For natural systems, are there any indicators of physical alteration (e.g., channeling, debris, etc.)?

☐ yes ☐ no. If yes, please describe indicators that were observed.

_____

4. What is the general composition of the substrate? Check all that apply. No observations made.

☐ Bedrock ☐ Sand (coarse) ☐ Muck (fine/black)

☐ Boulder (> 10 in.) ☐ Silt (fine) ☐ Debris

☐ Cobble (2.5–10 in.) ☐ Marl (shells) ☐ Detritus

☐ Gravel (0.1–2.5 in.) ☐ Clay (slick) ☐ Concrete

☐ Other (specify) _____

5. What is the condition of the bank (e.g., height, slope, extent of vegetation cover)?

_____

6. Is the system influenced by tides? ☐ yes ✓no. What information was used to make this determination?

7. Is the flow intermittent? ☐ yes ✓ no. If yes, please note the information that was used in making this determination.

8. Is there a discharge from the site to the waterbody? ✓ yes ☐ no. If yes, please describe the discharge and its path.

Possibly sheet flow from the MWRDGC property to the canal. The majority of the surface water flow is captured by combined storm/sanitary sewer systems that convey the water to the deep tunnel.

9. Is there a discharge from the waterbody? ✓ yes ☐ no. If yes, and the information is available, please identify what the waterbody discharges to and whether the discharge is on-site or off-site.

   There is no nearby discharge point for the canal. The canal flows towards the Illinois River.

10. Identify any field measurements and observations of water quality that were made. For those parameters for which data were collected, provide the measurement and the units of measure in the appropriate space below:

    No measurements were taken during the site visit. Measurements of the canal and water quality will be collected during the remedial investigation.

    _____ Width (ft)

    _____ Depth (ft)

    _____ Velocity (specify units): _____

    _____ Temperature (depth of the water at which the reading was taken _____)

    _____ pH

    _____ Dissolved oxygen

    _____ Salinity

    _____ Turbidity (clear, slightly turbid, turbid, opaque) (Secchi disk depth _____)

    _____ Other (specify) _____

11. Describe observed color and area of coloration.

12. Is any aquatic vegetation present? ☐ yes ☐ no. If yes, please identify the type of vegetation present, if known.

    ☐ Emergent ☐ Submergent ☐ Floating

13. Mark the flowing water system on the attached site map.

14. What observations were made at the waterbody regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc.?

V. WETLAND HABITAT CHECKLIST

1. Based on observations and/or available information, are designated or known wetlands definitely present at the site?

   ☐ yes ✓ no - based on field observations and review of topographic maps and Google earth.

   Please note the sources of observations and information used (e.g., USGS Topographic Maps, National Wetland Inventory, Federal or State Agency, etc.) to make this determination.

2. Based on the location of the site (e.g., along a waterbody, in a floodplain) and site conditions (e.g., standing water, dark, wet soils; mud cracks; debris line; water marks), are wetland habitats suspected? ☐ yes ✓ no. If yes, proceed with the remainder of the wetland habitat identification checklist.

3. What type(s) of vegetation are present in the wetland?

   ☐ Submergent ☐ Emergent

   ☐ Scrub/Shrub ☐ Wooded

   ☐ Other (specify) _____

4. Provide a general description of the vegetation present in and around the wetland (height, color, etc.). Provide a photograph of the known or suspected wetlands, if available.

5. Is standing water present? ☐ yes ☐ no. If yes, is this water: ☐ fresh ☐ brackish. What is the approximate area of the water (sq. ft.) _____. Please complete questions 4, 11, 12 in Checklist III – Aquatic Habitat – Non-Flowing Systems.

6. Is there evidence of flooding at the site? What observations were noted?

   ☐ Buttressing ☐ Water marks ☐ Mud cracks

   ☐ Debris line ☐ Other (describe below)

7. If known, what is the source of the water in the wetland?

   ☐ Steam/River/Creek/Lake/Pond ☐ Groundwater

   ☐ Flooding ☐ Surface Runoff

8. Is there a discharge from the site to a known or suspected wetland? ☐ yes ☐ no. If yes, please describe.

9. Is there a discharge from the wetland? ☐ yes ☐ no. If yes, to what waterbody is discharge released?

   ☐ Surface Stream/River ☐ Groundwater ☐ Lake/Pond ☐ Marine

10. If a soil sample was collected, describe the appearance of the soil in the wetland area. Circle or write in the best response.

    Color (blue/gray, brown, black, mottled) _____
    Water content (dry, wet, saturated/unsaturated) _____

11. Mark the observed wetland area(s) ion the attached site map.

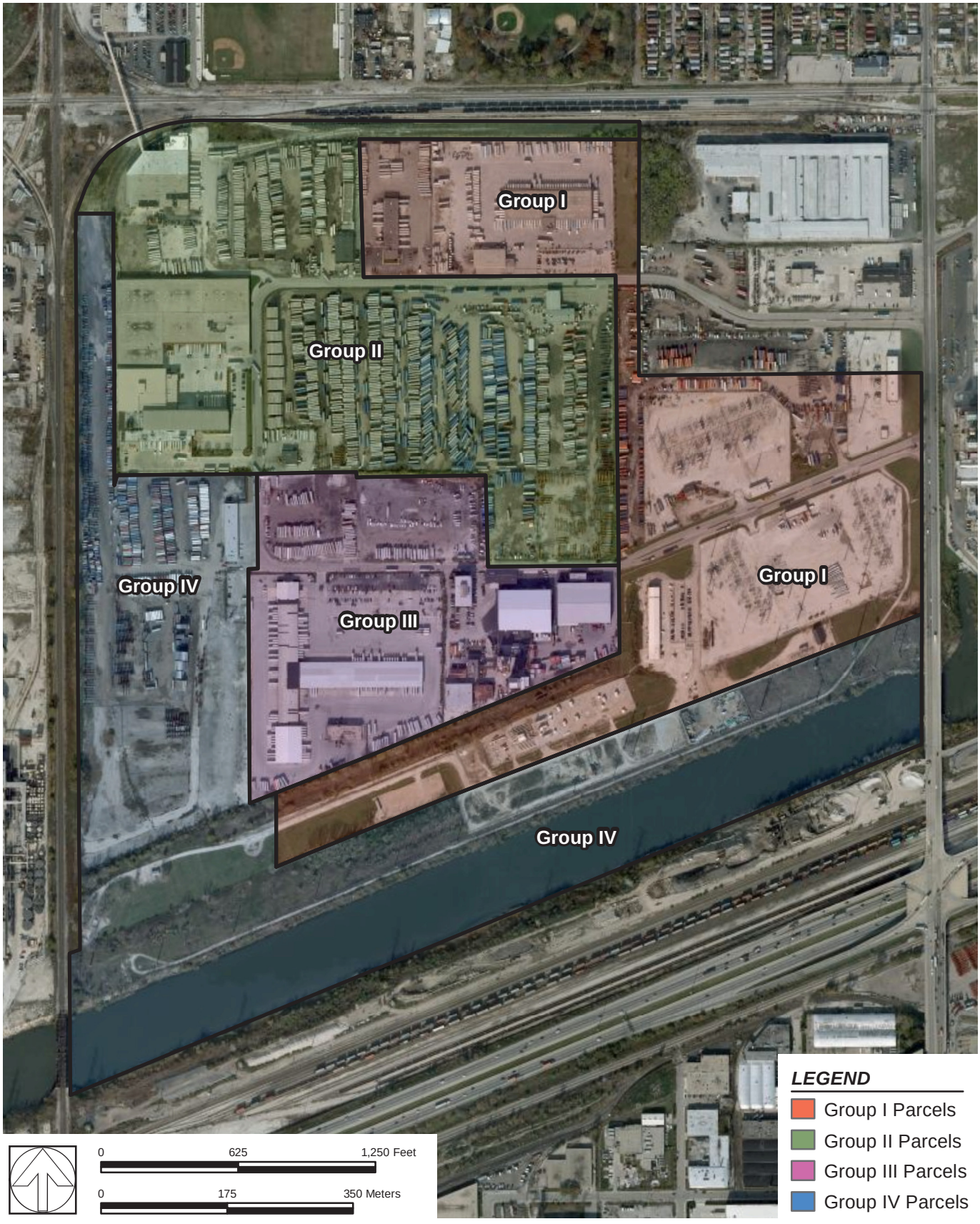

Figure 1. Proposed Remedial Investigation Parcel Groups

Exponent®

MY03195 | March 13, 2012 | P:\MY\MY03195.014_Crawford\GIS\projects\Crawfor_phase_plan.mxd

Figure 2. Habitat Conditions at Crawford Station Site

Exponent®

MY03195 | March 13, 2012 | P:\MY\MY03195.014_Crawford\GIS\projects\Crawfor_phase_plan - fig2.mxd

Former Crawford Station Manufactured Gas Plant Site
Site Visit Photographs
July 19, 2011

DSC03160

Photograph 1. Looking east at ComEd substation located on Parcel P & Q of the Group I area. Note the Midwest Generation Facility in the background located east of Pulaski Road.

DSC03157

Photograph 2. Looking approximately west within the grassy area of the Peoples Gas Crawford Station Facility. The gravel access road in the photograph can be seen on Figures 1 and 2 attached to the ecological checklist.

DSC03158

Photograph 3. Looking north from the far western portion of the Peoples Gas Crawford Station Facility (i.e., Parcel O) towards a portion of the Group IV area. This area in the photograph is part of the area in the southwest corner of the site where a time critical removal action is underway. The trees seen in this picture have subsequently been removed.

DSC03156

Photograph 4. Looking at the railroad right-of-way that runs along the western site boundary from the southwest corner of the site.

DSC03150

Photograph 5. Example of tar seeps on the Peoples Gas Crawford Station Facility property that is being remediated as part of a time critical removal action.

DSC03155

Photograph 6. Looking approximately southeast from tar seep area on the Peoples Gas Crawford Station Facility towards a wooded area on the adjacent Metropolitan Sanitary District of Greater Chicago property.

APPENDIX B

SOIL BORING LOGS FROM PARCEL I, 2013

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB101

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/11/2013	12/11/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / Ⓝ
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 50.4		1	0 - 1.8' **ASPHALT CUTTINGS**.				0						GW DEPTH 12.1
			2	1.6' 0.2' of large white gravel fragments. 1.8 - 4.2' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic with cinders, brick fragments and sand.	(FILL) ML			0	3.5					
			3	2.5' large gravel fragments. 3.1' 0.1' of gravel/ fine sand interbedded.				0	3					
			4	3.5' becomes very dark brown, with abundant sand and no brick fragments.				0	4					
				4.2 - 5' No Recovery.										
2	60 45.6		5	5 - 6.6' **FILL, SILT:** ML, with decreasing cinders and sand.	(FILL) ML			0	3.5					
			6	5.8' becomes brown, with no cinders or sand, with trace gravel.				0	3.5					
			7	6.6 - 8' **FILL, SILTY GRAVEL:** GM, loose, moist, white gravel with dark brown sand. 7.3' 0.7' of coarse black, wet cinders, no odor, with wood fragments.	(FILL) GM			0						
			8	8 - 8.8' **SILT:** ML, very stiff, moist, brown, medium plastic, with trace gravel and with clay.	ML			0	2					
			9	8.8 - 10' No Recovery.										
3	60 45.6		10	10 - 13.8' **SILT:** ML. 10.2' becomes stiff, with orange mottling.				0	1.5					
			11	11' with no gravel.	ML			0	1.5					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number ISB101

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 13.8' **SILT:** ML. *(continued)* 12.1' becomes wet, medium stiff.	ML			0						
			13					0	1					
			14	13.8 - 15' No Recovery.										
4	60 48		15	15 - 19' **SILT:** ML. 15.1' becomes very stiff, gray with trace gravel.	ML			0	4					
			16	16.2' becomes medium stiff, black, clay rich, with organics and musty odor, with no gravel.				0	1					
			17					0	1					
			18	18.4' becomes stiff, dark gray with trace clay.				0	2					
			19	19 - 20' No Recovery.										
			20	20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB102

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / Ⓝ
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 52.8			0 - 1.9' **ASPHALT CUTTINGS**.										GW Depth 12.9
			1					0						
			2	1.9 - 2.2' **FILL, POORLY-GRADED GRAVEL:** GP, loose, moist, light tan.	(FILL) GP			0						
			3	2.2 - 4.4' **FILL, SILTY SAND:** SM, brick. 2.5' medium stiff, moist, dark brown, fine, with cinders and slight tar-like odor. 3' with slag fragments.	(FILL) SM			0.2						
			4	4.1' creosote soaked piece of wood with increasing silt.				0						
				4.4 - 5' No Recovery.										
2	60 52.8		5	5 - 9.4' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic, with fine sand, abundant-cinders.				0.1	3.5					
			6					0.1						
			7	6.7' 0.2' of large wood fragments.	(FILL) ML				2.5					
				7.5' with no cinders.				0						
			8						3.5					
			9					0						
				9.4 - 10' No Recovery.										
3	60 45.6		10	10 - 13.8' **SILT:** ML, very stiff, moist, dark brown, low plastic, with fine sand.				0	4					
			11	10.8' with no sand, with trace clay.	ML			0	4.5					
			12						4.5					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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NATURAL RESOURCE TECHNOLOGY

Boring Number ISB102

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 13.8' **SILT:** ML, very stiff, moist, dark brown, low plastic, with fine sand. *(continued)*				0						
								0						
			13	12.9' becomes wet at 12.9', stiff.	ML				1					
				13' 0.2' of gravel fragments.										
				13.5' with trace coarse sand.				0						
			14	13.8 - 15' No Recovery.										
			15											
4	60 40.8			15 - 18.4' **SILT:** ML, with no sand, with clay.				0	2					
			16					0						
				16.6' becomes very dark brown, with organics and musty odor.	ML				2					
			17											
								0						
			18											
				18.1' becomes gray, with no organics.				0	2					
				18.4 - 20' No Recovery.										
			19											
			20											
5	60 54			20 - 24.5' **SILT:** ML, with decreasing clay.				0						
				20.5' becomes medium stiff.					1					
			21	21' becomes light gray.										
				21.5' with trace clay.				0						
			22						1					
					ML									
								0						
			23											
								0	1					
			24											
				24.5 - 25' No Recovery.										
			25	25' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB103

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/9/2013	12/9/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / (N)
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 51.6			0 - 0.3' **ASPHALT CUTTINGS**.										GW Depth 15'
			1	0.3 - 3.1' **FILL, SILT:** ML, loose, moist, dark brown, poorly sorted, angular. 1.1' 0.1' of wood fragments. 1.5' with silt and no gravel, brick fragments.	(FILL) ML			0.4 0						
			2	2.4' large brick fragments, trace coal.				0						
			3	3.1 - 4.2' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic, with brick fragments and trace large gravel.	(FILL) ML			0.1	4					
			4	4.2 - 5' No Recovery.										
2	60 60		5	5 - 8.8' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic, with brick fragments and trace large gravel. 5.3' with decreasing gravel and sand. 5.7' gravel fragments.	(FILL) ML			0.3	3					
			6											
			7	7' lower moisture area, with slight tar-like odor and brick fragments.				0.2 3.4	3					
			8	8.4' with large white gravel.										
			9	8.8 - 11.7' **FILL, SILTY CLAY** CL, stiff, moist, dark gray, medium plastic, with trace gravel.				0	2					
3	60 55.2		10		(FILL) CL									
			11	10.7' with increasing coarse sand, slight tar-like odor.				2.9	2					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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NATURAL RESOURCE TECHNOLOGY

Boring Number ISB103

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				11.7 - 12.1' **FILL, WELL-GRADED GRAVEL:** GW, medium dense, moist, dark brown, poorly sorted. *(continued)*	(FILL) GW			0.5	3.5					
			13	12.1 - 14.6' **FILL, SILT:** ML, very stiff, moist, dark gray, medium plastic, with clay. 13.5' with trace gravel and slag fragments.	(FILL) ML			0						
			14					0	3.5					
				14.6 - 15' No Recovery.										
4	60 30		15	15 - 17.5' **FILL, SILT:** ML, very stiff, moist, dark gray, medium plastic, with clay. 15.1' becomes wet.										
			16	15.4' with slight orange mottling.	(FILL) ML									
			17											
				17.5 - 20' No Recovery.										
			18											
			19											
5	60 60		20	20 - 23.1' **FILL, SILT:** ML, loose, wet, black, coarse grained, with cinders, oil-coated with tar-like odor, with roots.				53.6						
			21	21' increasing fine sand.	(FILL) ML									
			22	21.8' becomes fine grained.				72.2						
			23					41.3						
				23.1 - 27.4' **FILL, LEAN CLAY:** CL, soft, wet, gray, medium plastic, with silt, with slight tar-like odor.				10.7	0.5					
			24											
6	60 60		25		(FILL) CL			1.1	0.5					
								1	0.25					
			26	26' with no odor.										
								1.9	0.5					
			27	27' becomes stiff.					1.5					
				27.4 - 28.5' **FILL, POORLY-GRADED SAND:** SP, loose, wet, black, coarse grained oil- coated with strong tar-like odor, with wood/fragments.	(FILL) SP									
			28					58.1						
				28.5 - 30' **LEAN CLAY:** CL, soft, wet, gray, medium plastic with silt.										
			29		CL			1.7	0.25					
			30	30' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB104

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 52.8			0 - 0.5' **ASPHALT CUTTINGS**.										GW Depth 11.3'
			1	0.5 - 2.1' **FILL, POORLY-GRADED SAND:** SP, medium dense, moist, brown, coarse, with silt and fine gravel.	(FILL) SP			0						
			2	1.8' 0.3' of large white gravel fragments.										
			3	2.1 - 4.4' **SILT:** ML, very stiff, moist, grayish brown, low plasticity, with abundant wood and brick fragments. 2.8' large gravel fragments. 3.3' brick with trace coarse sand.	ML (FILL)			0	2.5 3.5					
			4					0	4					
				4.4 - 5' No Recovery.										
2	60 48		5	5 - 7.3' **FILL, SILT:** ML, with brick and trace wood.										
			6	5.6' becomes brown with no sand and with trace clay.	(FILL) ML			0	3					
				6.6' with slight tar like odor.					3					
			7	7.1' 0.2' of black cinders.				0.7	3					
			8	7.3 - 7.9' **FILL, WELL-GRADED GRAVEL:** GW, loose, moist, white, with coarse sand, slight tar-like odor.	(FILL) GW			2.3						
				7.7' pure coal tar, with cinders, strong tar-like odor (oil wetted).	ML			0.1	3					
			9	7.9 - 9' **SILT:** ML, very stiff, moist, brown, low plastic, with black staining and tar-like odor, with trace coarse sand, very faint odor.										
			10	9 - 10' No Recovery.				0	2.5					
3	60 42			10 - 13.5' **SILT:** ML, with no staining or odor, no sand.										
			11	10.9' with trace fine sand and occasional orange mottling.	ML									
				11.3' becomes wet.				0	2					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number ISB104

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 13.5' **SILT:** ML, with no staining or odor, no sand. *(continued)*										
				12.5' no orange mottling.	ML			0						
			13					0	2					
				13.5 - 15' No Recovery.										
			14											
			15											
4	60 34.8			15 - 17.9' **SILT:** ML, with increasing clay, becomes stiff.				0	1					
			16					0	1.5					
					ML									
			17					0	3					
				17.4' becomes very stiff, becomes black, clay-rich, with organics and musty odor.										
			18					0						
				17.9 - 20' No Recovery.										
			19											
			20											
				20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB105

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 49.2			0 - 0.6' **ASPHALT CUTTINGS**.										GW Depth 12.1
			1	0.6 - 2' **FILL, POORLY-GRADED SAND:** SP, loose, moist, brown, coarse, with gravel.	(FILL) SP			0						
			2	1.8' 0.2' of light gravel.										
			3	2 - 4.1' **FILL, SILT:** ML, very stiff, moist, very dark brown, low plastic, with fine sand and trace gravel. 2.6' becomes black. 2.8' 0.1' of black medium fragments. 3' with wood and brick fragments. 3.4' with cinders and trace slag.	(FILL) ML			0 0	2.5 3					
			4	4.1 - 5' No Recovery.										
2	60 60		5	5 - 7' **FILL, SILT:** ML, with no brick fragments or wood. 5.8' gravel fragments. 6.2' with increasing clay, decreasing cinders.	(FILL) ML			0	4 4					
			7	7 - 10.2' **FILL, LEAN CLAY:** CL, very stiff, moist, brown, low plastic, trace cinders.	(FILL) CL			0.4						
			8						3					
			9	8.7' with increasing silt, no cinders.				0.8						
			10	9.7 - 10.2' pure coal tar with suspended cinders (oil wetted).				14.8						
3	60 45.6		11	10.2 - 13.8' **FILL, SILT:** ML, very stiff, moist, very dark, brown, low plastic, with tar-like odor and oil sheen. 10.8' 0.2' of black fragments. 11.3' becomes stiff, brown, with very faint tar-like	(FILL) ML			4.2 2.8 0.9	2.5 1.5					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB105

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				odor and no sheen.										
			13	10.2 - 13.8' **FILL, SILT:** ML, very stiff, moist, very dark, brown, low plastic, with tar-like odor and oil sheen. *(continued)*	(FILL) ML			0.6	1.5					
				12' becomes wet, no odor.				0.2	1.5					
			14	13.8 - 15' No Recovery.										
4	60 55.2		15	15 - 19.6' **SILT:** ML.				0.1	1.5					
			16											
				16.3' darkening color.				0						
			17	17' becomes very stiff.	ML				2.5					
			18	17.9' becomes black, clay rich, with organics and musty odor.				0	2.5					
			19											
				19.3' becomes medium stiff, gray, with trace clay.				0	0.5					
			20	19.6 - 20' No Recovery.										
				20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB106

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 45.6			0 - 0.7' **ASPHALT CUTTINGS**.										GW Depth 13.4'
			1	0.7 - 1.8' **FILL, POORLY-GRADED SAND:** SP, medium stiff, moist, brown, medium grained, with trace silt. 1.6' 0.2' of large gravel fragments.	(FILL) SP			0 0						
			2	1.8 - 3.8' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic with sand. 2.4' with brick fragments and trace cinders. 2.6' 0.5' of abundant wood fragments, with faint tar-like odor. 3.1' brick. 3.2' large wood fragments. 3.5' becomes hard, black, with cinders and wood fragments.	(FILL) ML			0 0	2.5 4.5					
			3											
			4											
				3.8 - 5' No Recovery.										
2	60 57.6		5	5 - 9.8' **FILL, SILT:** ML, becomes very stiff, with trace gravel.	(FILL) ML			0	2.5					
			6	5.9' 0.2' of brick.										
			7	7.2' 0.2' of black cinders, no odor with increasing clay.				0	3.5					
			8	8.3' 0.1' of gravel. 8.6' becomes grayish brown and claying.				0.3	3.5					
			9					0	3.5					
			10	9.8 - 10' No Recovery.										
3	60 51.6			10 - 14.3' **FILL, SILT:** ML, with trace gravel. 10.4' 0.1' of wood fragments. 10.8' becomes light brown.	(FILL) ML			0 0	2.5					
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB106

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 14.3' **FILL, SILT:** ML, with trace gravel. *(continued)*					2.5					
								0						
			13	13' becomes stiff, gray.	(FILL) ML									
				13.4' becomes wet.										
			14					0						
				14.3 - 15' No Recovery.										
4	60 34.8		15	15 - 17.9' **SILT:** ML.				0	1.5					
			16					0	1.5					
					ML									
			17	16.7' becomes black, clay rich, with organics and musty odor.										
								0	1.5					
			18	17.9 - 20' No Recovery.										
			19											
5	60 51.6		20	20 - 24.3' **SILT:** ML.				0	1.5					
			21	20.9' becomes medium stiff, gray, with trace clay and no gravel.					0.5					
								0						
			22		ML									
								0	0.5					
			23											
								0	0.5					
			24											
				24.3 - 25' No Recovery.										
			25	25' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB107

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/11/2013	12/11/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 50.4			0 - 0.9' **ASPHALT CUTTINGS**.				0						GW Depth 11.2'
			1	0.9 - 1.9' **FILL, WELL-GRADED SAND:** SW, medium dense, moist, dark brown. 1.6' with large white gravel.	(FILL) SW			0						
			2	1.9 - 4.2' **FILL, SILT:** ML, very stiff, moist, brown, low plastic, with gravel and brick fragments and cinders. 2.9' 0.1' of brick. 3.2' becomes black with abundant cinders.	(FILL) ML			0 0	4					
			4	3.9' becomes brown with trace coarse sand and cinders, no gravel or brick, with clay.					3.5					
				4.2 - 5' No Recovery.										
2	60 54		5	5 - 9.5' **FILL, SILT:** ML.				0	3					
			6					0						
			7		(FILL) ML			0	2.5					
			8	8.4' 0.3' of slag fragments.	(FILL) ML									
			9	8.8' **FILL, SILT:** ML, 0.3' of slight orange mottling.				0	1.5					
				9.4' becomes stiff, with no cinders.										
			10	9.5 - 10' No Recovery.										
3	60 28.8			10 - 12.4' **SILT:** ML.				0 0	1.5					
			11	11.2' becomes wet, becomes very stiff, with orange mottling.	ML			0	2.5					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB107

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 12.4' **SILT:** ML. *(continued)*										
				12.4 - 15' No Recovery.										
			13											
			14											
			15											
4	60 39.6			15 - 18.3' **SILT:** ML.				0						
			16	16' becomes black, clay rich, with organics and musty odor.	ML			0	3.5					
			17	17' becomes medium stiff, gray, with no organics on sand, and with orange mottling.				0 0	0.5					
			18											
				18.3 - 20' No Recovery.										
			19											
			20	20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB108

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/11/2013	12/11/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 46.8			0 - 1.7' [65], **ASPHALT CUTTINGS**.										GW Depth 12.4'
								0						
			1											
				1.4' white gravel fragments.										
			2	1.7 - 3.9' **FILL, SILT:** ML, very stiff, moist, very dark brown, low plasticity, with sand, with cinders and brick fragments and wood fragments.	(FILL) ML			0	3.5					
			3	2.8' 0.2' of large brick fragments.				0	3.5					
				3.5' becomes black with abundant cinders and very slight petroleum-like odor.				0	4					
			4	3.9 - 5' No Recovery.										
2	60 54		5	5 - 9.5' **FILL, SILT:** ML.										
				5.6' 0.6' of fine gravel.				0	3.5					
			6											
								0	3.5					
			7	7.3' 0.3' of black cinders with tar-like odor.	(FILL) ML									
			8	7.8' becomes grayish brown, with clay, with no cinders, wood, or brick with no odor. 8.3 - 9' 0.7' of with orange mottling.				0.7	3					
			9											
				9.2' with trace gravel.				0	3					
				9.5 - 10' No Recovery.										
3	60 44.4		10	10 - 13.7' **SILT:** ML.				0	2.5					
			11		ML			0	2					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB108

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 13.7' **SILT:** ML. *(continued)*										
				12.4' becomes wet, medium stiff, with no sand and increasing clay.	ML			0	1					
			13					0	1					
			14	13.6' becomes very dark brown, clay rich, with organics and musty odor.										
				13.7 - 15' No Recovery.										
4	60 51.6		15	15 - 19.3' **SILT:** ML.										
				15.4' with decreasing clay.				0	1.5					
			16											
								0	1.5					
			17	17' becomes medium stiff, brownish gray, with trace with no trace gravel clay.	ML				0.5					
			18					0						
				18.6' with orange mottling.				0	0.5					
			19											
				19.3 - 20' No Recovery.										
			20	20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB109

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/11/2013	12/11/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / Ⓝ
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 54		1	0 - 1.2' **ASPHALT CUTTINGS**.										GW Depth 11.2'
			2	1.2 - 3.1' **FILL, SILTY SAND:** SM, medium dense, moist, brown, with trace gravel. 1.8' 0.5' of brick. 2.3' 0.2' of black wood. 2.5' 0.2' of brick. 2.7' wood and 0.4' of brick.	(FILL) SM			0 0.1						
			4	3.1 - 4.5' **FILL, SILT:** ML, very stiff, moist, dark brown, low plastic, with brick fragments and coarse sand. 4.1' coal fragments.	(FILL) ML			0	4					
			5	4.5 - 5' No Recovery.				0	4					
2	60 43.2		6	5 - 8.6' **SILT:** ML. 5.2' becomes black, with clay and cinders slag fragments. 5.5' slag fragments. 6.4' large white gravel fragments.	ML			0 0	3.5					
			7	6.8' 0.1' of very large white gravel fragments with fine sand.				0						
			8	7.2' becomes dark gray with no cinders o brick fragments.				0	3					
			9	8.6 - 10' No Recovery.					2					
3	60 42		10 11 12	10 - 13.5' **SILT:** ML. 10.7' with orange mottling. 11.2' becomes wet.	ML			0	2					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB109

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				11.9' with increasing clay, decreasing sand.				0						
				10 - 13.5' **SILT:** ML. *(continued)*					1.5					
			13	12.7' becomes stiff.	ML									
				12.9' gravel fragments.										
				13.2' becomes very dark brown, clay rich, with musty odor, and no sand.				0						
			14	13.5 - 15' No Recovery.										
			15											
4	60 56.4			15 - 19.7' **SILT:** ML.				0	1.5					
				15.6' shell fragments.										
			16											
				16.4' becomes soft, brownish gray, with trace clay.				0	0.5					
			17											
					ML									
								0	0.5					
			18											
				18.5' with orange mottling.										
			19					0						
									0.5					
			20	19.7 - 20' No Recovery.										
				20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB110

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 55.2			0 - 0.2' **ASPHALT CUTTINGS**.										GW Depth 12.6'
			1	0.2 - 2.1' **FILL, POORLY-GRADED SAND:** SP, medium dense, moist, light brown, with silt and trace gravel. 1.5' 0.2' of large white gravel fragments.	(FILL) SP			0						
			2	2.1 - 4.6' **FILL, SILT:** ML, stiff, moist, brown, low plastic, with abundant sand. 2.4' brick fragments. 2.8' wood fragments. 3' 0.5' abundant brick fragments.	(FILL) ML			0	2					
			3	3.7' becomes hard, and very dark brown.					4.5					
			4	4.4' with cinders and slight tar-like odor.				0.1	4.5					
			5	4.6 - 5' No Recovery.				2.7						
2	60 56.2			5 - 9.3' **FILL, SILT:** ML.				2.3	4.5					
			6	5.9' becomes very stiff, dark gray, with no sand, with trace cinders and gravel.					4					
			7		(FILL) ML			0.1						
			8	7.7' with no cinders or tar-like odor.					4					
			9	9' become stiff.				0.1	2.5					
				9.3 - 9.7' **FILL, WELL-GRADED SAND:** SW, loose, moist, gray, medium grained, with slight tar-like odor.	(FILL) SW			0.6						
			10	9.7 - 10' No Recovery.										
3	60 50.4			10 - 14.2' **SILT:** ML, very stiff, moist, brownish gray, medium plastic, with trace gravel and clay.	ML			0	2.5					
			11	11.5' with slight orange mottling.										
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB110

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 14.2' **SILT:** ML, very stiff, moist, brownish gray, medium plastic, with trace gravel and clay. *(continued)*				0	3					
			13	12.5' becomes wet.	ML									
								0	2.5					
			14	13.8' with no gravel.				0	2					
				14.2 - 15' No Recovery.										
4	60 30		15	15 - 17.5' **SILT:** ML.				0	3					
			16		ML			0	2					
			17	17.1' becomes clay-rich, very dark brown, with organics.				0	2					
			18	17.5 - 20' No Recovery.										
			19											
5	60 56.4		20	20 - 24.7' **SILT:** ML, very stiff, wet, very dark brown, medium plastic, with clay and organics.				0	2					
			21	21' becomes stiff, gray, with no clay.				0	1.5					
			22	22.1' 0.8' of brownish gray.	ML			0	1					
			23					0	1					
			24											
			25	24.7 - 25' No Recovery.										
				25' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB111

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/9/2013	12/9/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 49.2		1	0 - 0.2' **ASPHALT CUTTINGS**. 0.2 - 1.5' **FILL, SILTY SAND:** SM, medium dense, moist, very dark brown (7.5YR 2.5/2), poorly served, with trace fine gravel.	(FILL) SM			0						GW Depth 11.9'
			2	1.4' 0.1' of large gravel fragments. 1.5 - 4.1' **FILL, SILT:** ML, very stiff, moist, dark grayish brown (10YR 4/2), low plastic. 2.4' 0.1' of gravel fragments.	(FILL) ML			0	3					
			3	2.8' large brick fragments. 3.1' with increasing clay, becomes dark gray (7.5YR 4/1). 3.5' brick fragments.				0 0	3.5 4.5					
			4	3.8' becomes hard. 4.1 - 5' No Recovery.										
2	60 39.6		5	5 - 5.8' **FILL, SILT:** ML. 5.1' becomes stiff. 5.5' with increasing sand.	(FILL) ML			0	2					
			6	5.8 - 6.7' **FILL, POORLY-GRADED SAND:** SP, loose, moist, dark grayish brown (10YR 4/2), fine grained.	(FILL) SP			0						
			7	6.3' **FILL, LEAN CLAY:** CL, 0.2' of clay. 6.5' 0.2' of cinders, no odor.	(FILL) CL			0	3					
			8	6.7 - 8.3' very stiff, moist, gray (7.5YR 5/1), medium plastic, with abundant silt.				0	3.5					
			9	8.3 - 10' No Recovery.										
3	60 48		10	10 - 13.7' **FILL, LEAN CLAY:** CL, very stiff, moist, gray (7.5YR 5/1), low plastic, with abundant silt. 10.6' becomes dark gray (5YR 4/1).	(FILL) CL			0	3.5					
			11					0	3					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB111

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				11.9' becomes wet.										
			13	10 - 13.7' **FILL, LEAN CLAY:** CL, very stiff, moist, gray (7.5YR 5/1), low plastic, with abundant silt. *(continued)*	(FILL) CL			0	3.5					
				13.6' wood fragment.				0	3.5					
			14	13.7 - 14' very stiff, dark gray (5YR 4/1), low plastic, with abundant silt.										
				14 - 15' No Recovery.										
4	60 56.4		15	15 - 19.7' **LEAN CLAY:** CL. 15.3' becomes very dark gray (5Y2 3/1).				0	3.5					
			16											
			17	16.9' becomes stiff.	CL			0	2					
			18					0	2					
				18.4' becomes medium stiff, gray (10YR 6/1).										
			19					0	1					
				19.7 - 20' **LEAN CLAY:** CL, No Recovery.										
5	60 60		20	20 - 30' medium stiff, wet, gray (10YR 6/1), medium plastic, with abundant silt.	CL			0	1					
			21											
				21.5' becomes soft.				0	0.5					
			22											
								0						
			23											
									0.5					
			24					0	0.5					
6	60 60		25											
				25.2' shell fragments.										
			26	25.8' becomes hard, gray (7.5YR 5/1).				0	4.5					
			27	27' with trace gravel.										
			28					0	4.5					
			29					0	4.5					
			30	30' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB112

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/10/2013	12/10/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / N
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 60			0 - 0.2' **ASPHALT CUTTINGS**.										GW Depth 11.7'
				0.2 - 0.4' **FILL, POORLY-GRADED SAND:** SP, loose, moist, tan, fine.	(FILL) SP			0 0	4.5					
			1	0.4 - 8.8' **FILL, SILT:** ML, hard, moist, brown, low plastic, with sand and gravel. 0.9' 0.1' of gravel fragments. 1' brick.										
			2	1.2' becomes dark brown, with abundant brick fragments, very stiff.				0	3					
			3	2.4' with no brick fragments, with trace gravel.										
				3.4' coal fragments.					3					
			4	4.1' becomes very dark brown. 4.3' 0.5' of light brown mottling.	(FILL) ML			0	3					
2	60 54		5											
								0	2.5					
			6	6' becomes brown, with coal fragments.					2.5					
			7	6.8' with no coal fragments or sand, with trace gravel.				0						
				7.5' with clay, with no gravel.										
			8					0	2.5					
			9	8.8 - 9.5' **SILT:** ML, becomes medium stiff, with orange mottling.	ML			0						
				9.5 - 10' No Recovery.					2					
3	60 43.2		10	10 - 13.6' **SILT:** ML, medium stiff, moist, brown, low plastic, with clay and orange mottling.				0	2					
			11		ML			0	3.5					
			12	11.7' becomes wet.					3.5					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB112

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 13.6' **SILT:** ML, medium stiff, moist, brown, low plastic, with clay and orange mottling. *(continued)*				0	1.5					
			13	13' becomes dark brown, with abundant clay and musky odor.	ML			0	3					
			14	13.6 - 15' No Recovery.										
4	60 56.4		15	15 - 15.6' **SILT:** ML, medium stiff, moist, brown, low plastic, with clay and orange mottling.	ML			0						
			16	15.6 - 19.7' **SILT:** ML, soft, wet, light brown, medium plasticity, with clay.					0.5					
			17	17' with trace clay, slight orange mottling.				0						
			18		ML			0	0.5					
			19						0.5					
			20	19.7 - 20' No Recovery.										
				20' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB113

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/9/2013	12/9/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / Ⓝ
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 43.2			0 - 0.5' **ASPHALT CUTTINGS**.										GW Depth 10.7'
			1	0.5 - 1' **FILL, POORLY-GRADED SAND:** SP, loose, moist, brown (7.5YR 4/2), with light gray gravel (7.5 YR 7/1).	(FILL) SP			0						
			2	1 - 3.6' **FILL, SILT:** ML, very stiff, moist, dark brown (7.5YR 3/2), low plastic, with cinders.	(FILL) ML			0	3.5					
			3	2.9' 0.1' of fine brick fragments and slag. 3' with trace gravel.				0	3.5 3.5					
			4	3.6 - 5' No Recovery.										
2	60 55.2		5	5 - 7' **FILL, SILT:** ML. 5.1' with abundant cinders.										
			6	5.7' becomes brown (7.5YR 5/2), with no cinders.	(FILL) ML			0	3.5					
				6.4' with increasing sand.				0	3.5					
			7	6.9' medium gravel.										
				7 - 7.8' **FILL, POORLY-GRADED SAND:** SP, loose, moist, reddish brown (10YR 5/2), medium plastic, with trace coarse sand.	(FILL) SP									
			8	7.7' large gravel fragments.				0						
			9	7.8 - 9.6' **FILL, LEAN CLAY:** CL, stiff, moist, grayish brown, (10YR 5/2), medium plastic, with trace coarse sand.	(FILL) CL			0	2					
			10	9.6 - 10' No Recovery.										
3	60 33.6			10 - 12.8' **FILL, LEAN CLAY:** CL, stiff, moist, grayish brown (10YR 5/2), medium plastic, with silt.				0	2					
			11	10.7' becomes wet. 11' trace gravel and coarse sand.	(FILL) CL			0	2					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB113

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				10 - 12.8' **FILL, LEAN CLAY:** CL, stiff, moist, grayish brown (10YR 5/2), medium plastic, with silt. *(continued)*	(FILL) CL			0	1.5					
			13	12.8 - 15' No Recovery.										
			14											
			15	15 - 19.6' **FILL, LEAN CLAY:** CL, stiff, moist, grayish brown (10YR 5/2), medium plastic, with silt.										
4	60 60							0	1.5					
			16											
								0	1.5					
			17		(FILL) CL									
			18	17.7' becomes soft, with trace silt.				0	0.5					
				18.4' with trace coarse sand and brick fragments.										
			19	18.8' 0.1' of dark brown (7.5YR 3/2) coarse sand.										
			20	19.6 - 22.6' **FILL, POORLY-GRADED SAND:** SP, loose, wet, black (10YR 2/1), poorly sorted with brick fragments and cinders.				0						
5	60 60							0.1						
			21	20.8' very slight petroleum odor, with wood fragments.	(FILL) SP			0.5						
			22	21.7' with decreasing grain size, no wood or brick.				0.1						
				22.3' becomes fine-grained.				0.1						
			23	22.6 - 28' **LEAN CLAY:** CL, medium stiff, wet, gray (10YR 5/1), medium plastic, with abundant silt.				0	1					
			24					0	1					
			25											
6	60 36				CL			0	1					
			26											
			27	26.7' becomes soft.										
			28	28 - 30' No Recovery.				0 0	0.5 0.5					
			29											
			30	30' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB114

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/9/2013	12/9/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / Ⓝ
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 48			0 - 0.7' **ASPHALT CUTTINGS**.										GW Depth 12.2'
			1	0.7 - 2.2' **FILL, POORLY-GRADED SAND:** SP, medium dense, moist, dark brown, coarse grained, with silt. 1.4' 0.3' of large brick fragments. 1.9' 0.2' of large white gravel.	(FILL) SP			0 0						
			2	2.2 - 4' **FILL, SILT:** ML, very stiff, moist, very dark brown, with coarse sand and trace gravel, low plastic. 3' 0.3' of large white gravel.	(FILL) ML			0 0	2.5 4					
			3	4 - 5' No Recovery.										
2	60 60		4	5 - 11.9' **FILL, SILT:** ML, very stiff, moist, very dark brown, with coarse sand and trace gravel, low plastic. 5.2' with brick fragments. 6.1' with no brick fragments and trace coarse sand.	(FILL) ML				3 3.5					
			5											
			6											
			7											
			8											
			9	8.5' 0.2' of large brick. 8.7' 0.2' of large gravel. 9' becomes hard.					4.5					
			10	9.7' 0.3' of large gravel.										
3	60 46.8							0	4.5 4					
			11	10.8' becomes very stiff. 10.9' 0.4' of angular white gravel.										
			12					0						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB114

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				11.9 - 13' **FILL, WELL-GRADED SAND:** SW, loose, moist, tar, poorly sorted, angular. *(continued)*	(FILL) SW									
				12.2' becomes wet.				0						
			13	12.4' abundant gravel.										
				12.6' 0.2' of dark brown clay.	(FILL) ML				3					
				12.9' becomes fine grained, black, with cinders.				0						
			14	13 - 13.9' **FILL, SILT:** ML, very stiff, wet, grayish brown, low plastic, with trace coarse sand.										
				13.9 - 15' No Recovery.										
4	60 55.2		15	15 - 19.6' **FILL, SILT:** ML, very stiff, wet, grayish brown, low plastic, with trace coarse sand.				0	2					
				15.2' with orange mottling.										
			16	15.8' with no sand or orange mottling.										
								0	1.5					
			17	16.7' becomes stiff with clay.	(FILL) ML									
			18	17.9' becomes medium stiff.					1					
								0						
			19						0.5					
				19.6 - 20' No Recovery.										
5	60 60		20	20 - 21.9' **FILL, SILT:** ML, medium stiff, wet, grayish brown, low plastic.					1					
				20.6' 0.4' of abundant coarse sand.	(FILL) ML			0						
			21						2.5					
				21.3' becomes very stiff.										
			22	21.9 - 28.6' **FILL, POORLY-GRADED SAND:** SP, medium dense, wet, black, coarse, oil stained, with strong petroleum- like odor and abundant cinders.				9.6						
								52						
			23	22.6' 0.2' of wood.										
				23.2' 0.2' of oil coated.										
			24					10.8						
6	60 48		25	25.3' with coarse sand.	(FILL) SP									
			26					6.7						
				26.3' with no coarse sand.										
			27	26.9' 0.2' of oil- coated.				4.4						
				27.4' wood fragments.										
			28					1.7						
			29	28.6 - 29.2' **POORLY-GRADED SAND:** SP, stiff, wet, gray, medium plastic, with trace silt.	SP			0	1					
				29.2 - 30' No Recovery.										
			30	30' End of Boring.										

NATURAL RESOURCE TECHNOLOGY

SOIL BORING LOG INFORMATION

DRAFT

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Crawford Station - Parcel I Source Material Investigation		ISB115

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Jorge Luna Earth Solutions, Inc.	12/9/2013	12/9/2013	GeoProbe

Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
	Feet (NAVD)	Feet (NAVD)	inches

Local Grid Origin ☒ (estimated: ☒) or Boring Location ☐
State Plane N, E S / C / (N)
1/4 of 1/4 of Section , T N, R
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	State	Civil Town/City/ or Village
	Cook	Illinois	Chicago

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	60 42			0 - 0.7' **ASPHALT CUTTINGS**.										GW Depth 12.9'
			1	0.7 - 2' **FILL, SILTY SAND:** SM, medium dense, moist, brown, fine grained,.	(FILL) SM			0						
			2	1.7' 0.3' of white gravel.										
				2 - 30' **FILL, SILT:** ML, very stiff, moist, grayish brown, low plastic, with trace coarse sand and clay.				0	3.5					
			3	2.7' 0.2' of brick fragments.										
			4					0	3.5					
2	60 60		5											
			6	5.4' becomes black, with coarse sand and faint naphthalene- like odor.				0.6	3.5					
				6.1' 0.2' of abundant slag.										
			7	6.6' becomes grayish brown.	(FILL) ML			0	3.5					
				7.4' 0.2' of yellow sand, lens.										
			8	7.8' 0.1' of strong naphthalene odor.				0						
			9	9' brick fragments, becomes stiff with no sand.				0	2					
			10	9.7' large piece of gravel.				0	2					
3	60 51.6							1.9						
			11	10.7' becomes very dark brown, with faint tar-like odor with brick fragments.										
			12	11.5' becomes grayish brown.				0.1	2.5					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
DRAFT - JDG	Natural Resource Technology, Inc. 300 S. Wacker Drive, Suite 2050, Chicago, IL 60606	Tel: 312.465.1740 Fax: 414.837.3608

NATURAL RESOURCE TECHNOLOGY

Boring Number ISB115

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID 10.6 eV Lamp	Soil Properties: Compressive Strength (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				2 - 30' **FILL, SILT:** ML, very stiff, moist, grayish brown, low plastic, with trace coarse sand and clay. *(continued)*										
			13	12.9' becomes wet.					2.5					
				13.3' with trace coarse sand and no brick fragments, and with orange mottling.				0						
			14											
									2.5					
4	60 60		15	15.2' becomes medium stiff, with no coarse sand.				0	1.5					
			16											
			17	17.2' coal fragment.				0	1.5					
			18	17.9' 0.3' of large angular gravel.				0						
				18.3' becomes native, with clay.										
			19											
				19.5' becomes very dark brown, stiff, with little black specks.				0	2.5					
5	60 60		20					0	2					
			21	20.8' becomes brown, very stiff, with shell fragments.	(FILL) ML			0	4					
			22	22.1' becomes dark brown, stiff, with trace fine sand.				0	2					
			23											
			24	24.1' becomes brownish gray.				0	2					
6	60 60		25	25.1' becomes very stiff.				0	3.5					
				25.5' becomes dark brown, stiff, with abundant clay.										
			26						2					
			27	27.3' becomes medium stiff, gray, with trace clay.				0	1					
			28					0						
									1					
			29					0						
			30	30' End of Boring.										

APPENDIX C

SITE-SPECIFIC COPC SCREEN FOR SOIL, GROUNDWATER, AND SOIL GAS

Appendix C
Site-Specific COPC Screen for Soil, Groundwater and Soil Gas at the Former Crawford Station MGP Site

Constituents of potential concern (COPC) at former manufactured gas plant (MGP) sites within the Integrys Multi-Site program can be found in Table 1 of the United States Environmental Protection Agency (USEPA)-approved 2007 Multi-Site Risk Assessment Framework (RAF). A supplemental screening has been performed for the Crawford Station Site to determine if constituents should be added to or deleted from those on the Multi-Site RAF COPC list, based on a site-specific assessment which considers the results of previous on-site sampling and historic property uses.

COPC SCREENING APPROACH

This site-specific assessment encompasses the analytical results from over 800 soil samples and groundwater from permanent monitoring wells at the Crawford Station Site on Parcels A, B, D, F, K, L, M, O, and S. These parcels encompass most of the area where former MGP production facilities were located as well as broad representative areas of the Site where no MGP operations occurred. Based on the above, the COPC list resulting from this screening will apply to the soil and groundwater RI activities on all parcels of the Crawford Station Site. The COPC list will be reviewed as additional analytical data or historic property use information becomes available that warrant further supplemental screening.

This supplemental assessment was performed using historic data and the following screening techniques:

- Maximum constituent concentrations were compared to residential screening levels (SL) using the sources and hierarchy described in the Multi-Site document, Risk Assessment Framework Addendum (Exponent, 2011). Those constituents with maximum concentrations above the residential SL were carried forward for further consideration as site-specific COPCs.

- The frequency of detection above the method detection limit (MDL) was determined for those chemicals that exceeded residential SLs to assess their prevalence on site. Analytes, not on the standard COPC list in 2007 RAF, detected above the residential SLs that were also detected above MDLs in more than 5 percent (%) of the samples analyzed would be carried forward as site-specific COPCs. The 5% criterion is a common supplemental criterion used in COPC selection within risk assessments (USEPA, 1989).

- Constituents that exceeded the residential SL with a frequency of detection above the MDL of less than 5% were generally not carried forward as potential COPCs unless a site-specific factor indicated that further evaluation was prudent.

The results of this site-specific COPC screening process are described below for each matrix.

SUPPLEMENTAL SITE-SPECIFIC SOIL COPC EVALUATION

Summary statistics for constituents that exceed residential SLs in soil on these parcels are presented in Table C-1. Analytes, not on the stand COPC list, that did not exceed their respective residential SL are not listed in the table.

Further evaluation of former MGP operations that may potentially include constituent that are not on the COPC list, were evaluated closely to rule out inclusion on the COPC list. Several former MGP operations were present on Crawford that are not found on many of the other PGL sites, such as a former machine shop, transformers and an electrical substation. These areas were further scrutinized to determine if additional COPCs are necessary. Soil borings previously conducted within the vicinity of the machine

shop on Parcel B were evaluated to determine if chlorinated volatile organic compounds (CVOCs) were detected previously. Soil boring samples, SP076, SP077 and SP078 were advanced to 20 feet in the vicinity of the machine shop in 2001 (Figure 5B of the SSWP, Add#2, Rev.1). Samples were collected at various depth intervals between 1 to 10 feet bgs. (Note that ISB111 and ISB112 were advanced to identify location of NAPL during the investigation were only used for field observations of NAPL and no samples were collected).The samples were analyzed for total VOCs and SVOCs. No CVOCs or PVOCs were detected. Review of the corresponding boring logs, indicated no elevated PID measurements throughout the soil column, to suggest the presence of any VOCs. Therefore, no additional sampling for CVOCs or PVOCs in recommended near the machine shop.

In addition, chlorinated ethenes and ethanes have been sampled at the Crawford Station Site, including areas where MGP operations occurred. Of the 808 samples that were analyzed, chlorinated parent compounds (e.g. 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethene and/or trichloroethene) or their degradation products were only detected in a few samples at concentrations above the MDL but well below their residential SLs. Therefore, chlorinated compounds will be not carried forward as COPCs.

Former electrical substation and transformers were located on Parcel M and Parcel T, respectively. No samples were collected previously near these two former structures. Therefore, polychlorinated biphenyls (PCBs) will be included in the soils in the vicinity of these former structures.

The SVOC N-Nitrosodimethylamine has a soil residential SL of 2.3 ug/kg and was not detected in the 155 samples analyzed. This is the only constituent where the MDL (typically 330 ug/kg) exceeded the residential SL in all analyzed samples. N-Nitrosodimethylamine is not included on the Multi-Site RAF COPC list and is not considered a site-specific COPC.

The soil constituents that exceed the residential SLs and also have a frequency of detection above MDLs greater than 5% at the Crawford Station Site include the following:

- Petroleum volatile organic compounds (PVOC) – 1,2,4-Trimethylbenzene, benzene, ethylbenzene and total xylenes
- Semivolatile organic compounds (SVOC) – carbazole and dibenzofuran
- Polycyclic aromatic hydrocarbons (PAH) – acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, pyrene and 2-methylnaphthalene
- Metals – total arsenic, total lead, and total thallium
- Total cyanide

These constituents will be analyzed in soil samples collected at the Crawford Station Site. In addition, <u>all PVOCs, SVOCs, metals, and PAHs from the 2007 Multi-Site RAF COPC list will be retained as site-specific COPCs</u> because they are typically the main risk drivers at MGP sites. PCBs will be collected at two locations: TSB111 and MSB103, due to the presence of former features that may have contained PCBs as part of their operations.

SITE-SPECIFIC GROUNDWATER COPC EVALUATION

Fifty-three monitoring wells were installed and sampled one time each over broad areas of the Crawford Station Site. While a large data set does not currently exist from individual monitoring wells, the compounds detected in groundwater from the large number of monitoring wells generally coincide with constituents found in soil above residential SLs. Based on available data for both soil and groundwater (Table C-1), the site-specific COPCs for groundwater will include the same COPCs selected for soil:

- PVOCs – benzene, ethylbenzene, toluene, total xylenes,1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene;
- SVOCs – 2,4-dimethylphenol, 2-methyphenol, 3&4-methylphenol, phenol, carbazole and dibenzofuran;
- PAHs (total and dissolved) – acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene, and 2-methylnaphthalene;
- Metals (total and dissolved) – antimony, arsenic, cadmium, chromium, lead, mercury, nickel, selenium, and thallium.
- Available cyanide (replaces total cyanide).

Dissolved metals and PAHs will be sampled for in groundwater during the sampling events as well. The groundwater COPC list may be re-evaluated based on results from the initial sampling rounds during the site-wide groundwater characterization in the Group III RI activities.

SITE-SPECIFIC SOIL GAS (VAPOR) SELECTION

The COPC list for Soil Gas has been evaluated and is presented in Appendix F.

SITE-SPECIFIC SEDIMENT AND SURFACE WATER COPC SELECTION

The COPC list for sediment and surface water will be evaluated in the Group IV RI activities as an addendum to the SSWP.

A summary of site-specific soil, groundwater and soil gas COPCs for the Crawford Station Site is presented in Appendix C, Table C-2.

REFERENCES

Exponent, September 5, 2007. Multi-Site Risk Assessment Framework

Exponent, March 2011. “Risk Assessment Framework Addendum.”

Natural Resource Technology, Inc., December 23, 2011. Completion Report, Rev. 0, Crawford Station MGP Site, Chicago, Illinois.

Natural Resource Technology, Inc., January 31, 2012. Completion Report Addendum No. 1 – Site Investigation Activities - Parcel K, Crawford Station MGP Site.

TABLES

Table C-1 Summary Statistics for Soil and Groundwater, Crawford Station Site-Specific Work Plan

Table C-2 Site-Specific COPCs for Soil, Groundwater and Soil Gas, Crawford Station Site-Specific Work Plan

ATTACHMENTS

Attachment C-1 Table 1 of the USEPA-Approved Multi-Site Risk Assessment Framework (RAF) – MGP-Related Contaminants of Potential Concern, Former MGP Sites, EPA Region 5

Table C-1 – Summary Statistics for Soil and Groundwater
Crawford Station Site (Overall)
USEPA ILN000510192

VOLATILE ORGANIC COMPOUNDS

	1,2,4-Trimethylbenzene	Benzene	Ethylbenzene	Methylene Chloride	Xylene, o	Xylenes, m + p	Xylenes, Total
SOIL							
Minimum Concentration Detected (ug/kg)	270	5	6	< 4.1	6.4	8.9	5
Maximum Concentration Detected (ug/kg)	131000	519000	360000	< 260000	190000	550000	798000
IL Residential SL (ug/kg)	62000	1100	5400	56000	690000	590000	630000
Total Number of Samples Analyzed:	7	855	855	824	320	320	552
No. Samples Detected Above MDL:	6	144	107	0	63	67	62
No. Samples Exceeding Residential SL	1	67	49	0	0	0	1
% Samples With Detections Above MDL	85.71%	16.84%	12.51%	0.00%	19.69%	20.94%	11.23%
GROUNDWATER							
Minimum Concentration Detected (ug/l)	<0.97	7	13	18	15	7.4	16
Maximum Concentration Detected (ug/l)	<0.97	460	580	20	300	210	510
IL Residential SL (ug/l)	15	5	700	5	190	190	10000
Total Number of Samples Analyzed:	5	57	57	51	10	10	57
No. Samples Detected Above MDL:	0	5	7	3	3	3	6
No. Samples Exceeding Residential SL	0	5	0	3	1	1	0
% Samples With Detections Above MDL	0.00%	8.77%	12.28%	5.88%	30.00%	30.00%	10.53%

Table C-1 – Summary Statistics for Soil and Groundwater
Crawford Station Site (Overall)
USEPA ILN000510192

SEMI-VOLATILE ORGANIC COMPOUNDS

	2-Methylnaphthalene	1,4-Dichlorobenzene	Acenaphthene	Acenaphthylene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Carbazole	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene
SOIL																		
Minimum Concentration Detected (ug/kg)	280	291	12.4	28	28	30	33	29	36	322	28	25	230	28	25.6	29	29	28
Maximum Concentration Detected (ug/kg)	8800000	3080	1800000	5180000	4140000	2120000	2170000	7020000	1990000	2240000	3490000	284000	3490000	9500000	6020000	2240000	3.5E+08	6200000
IL Residential SL (ug/kg)	230000	2400	3.4E+06	3.4E+06	150	15	150	1.7E+06	1500	32000	15000	15	78000	2.3E+06	2.3E+06	150	3600	1.7E+06
Total Number of Samples Analyzed:	809	808	861	862	862	862	862	862	862	656	862	862	808	862	862	862	862	862
No. Samples Detected Above MDL:	232	13	305	357	478	477	462	406	452	146	492	311	177	522	350	404	400	534
No. Samples Exceeding Residential SL	27	2	0	2	432	477	411	1	209	4	90	311	16	6	3	339	126	8
% Samples With Detections Above MDL	28.68%	1.61%	35.42%	41.42%	55.45%	55.34%	53.60%	47.10%	52.44%	22.26%	57.08%	36.08%	21.91%	60.56%	40.60%	46.87%	46.40%	61.95%
GROUNDWATER																		
Minimum Concentration Detected (ug/l)	18	<1.9	0.0063	0.0043	0.02	0.019	0.027	0.02	0.025	30	0.029	0.0076	21	0.0044	0.0075	0.016	0.012	0.028
Maximum Concentration Detected (ug/l)	280	<75	860	270	7.8	7.2	7.5	7.3	5.8	240	8.7	1.1	68	46	110	3.6	4800	70
IL Residential SL (ug/l)	27	75	420	420	0.13	0.2	0.18	210	0.17	NA	1.5	0.3	5.8	280	280	0.43	140	210
Total Number of Samples Analyzed:	47	47	57	57	57	57	57	57	57	47	57	57	47	57	57	57	57	57
No. Samples Detected Above MDL:	5	0	12	11	13	12	11	8	11	2	10	7	2	9	12	10	16	10
No. Samples Exceeding Residential SL	4	0	1	0	11	7	7	0	6	0	3	2	2	0	0	3	5	0
% Samples With Detections Above MDL	10.64%	0.00%	21.05%	19.30%	22.81%	21.05%	19.30%	14.04%	19.30%	4.26%	17.54%	12.28%	4.26%	15.79%	21.05%	17.54%	28.07%	17.54%

Table C-1 – Summary Statistics for Soil and Groundwater
Crawford Station Site (Overall)
USEPA ILN000510192

INORGANIC COMPOUNDS

	Antimony, Total	Arsenic, Total	Beryllium, Total	Cadmium, Total	Chromium, Total	Lead, Total	Mercury, Total	Nickel, Total	Selenium, Total	Thallium, Total	Cyanide, Amenable	Cyanide, Total
SOIL												
Minimum Concentration Detected (ug/kg)	400	1100	150	210	2900	6.1	21	2900	680	1000	< 390	250
Maximum Concentration Detected (ug/kg)	33000	520000	7200	50000	180000	6200000	48000	74000	16000	490000	< 600	449000
IL Residential SL (ug/kg)	31000	13000	160000	70000	1.20E+08	400000	23000	1.5E+06	390000	780	NA	47000
Total Number of Samples Analyzed:	812	845	812	845	845	845	845	812	845	812	11	825
No. Samples Detected Above MDL:	24	839	709	327	838	840	484	797	179	139	0	169
No. Samples Exceeding Residential SL	1	198	0	0	0	10	2	0	0	139	0	9
% Samples With Detections Above MDL	2.96%	99.29%	87.32%	38.70%	99.17%	99.41%	57.28%	98.15%	21.18%	17.12%	0.00%	20.48%
GROUNDWATER												
Minimum Concentration Detected (ug/l)	6.7	5	5.8	19	16	2.6	0.32	11	7.6	2.7	19	16
Maximum Concentration Detected (ug/l)	6.7	160	5.8	19	220	730	1.6	400	79	14	640	4200
IL Residential SL (ug/l)	6	10	4	5	100	7.5	2	100	50	2	NA	200
Total Number of Samples Analyzed:	48	51	48	51	51	51	51	48	51	48	48	48
No. Samples Detected Above MDL:	1	10	1	1	8	17	5	18	6	5	8	17
No. Samples Exceeding Residential SL	1	8	1	1	2	11	0	2	1	5	0	9
% Samples With Detections Above MDL	2.08%	19.61%	2.08%	1.96%	15.69%	33.33%	9.80%	37.50%	11.76%	10.42%	16.67%	35.42%

=constituent concentration detected above the residential SL and frequency of detection above the method dection limit (MDL) greater than 5%.

NATURAL RESOURCE TECHNOLOGY

Table C-2: Site-Specific COPCs for Soil, Groundwater, and Soil Gas
Crawford Station Site-Specific Work Plan, Addendum 2 (Group III), Revision 1
USEPA ILN000510192

COPCs	Parcels Parcels I, J, N, M and T
Soil	
PVOCs[1]	X
SVOCs[2]	X
PAHs[3]	X
Total Metals[4]	X
Total Cyanide	X
PCBs	X[5]
Groundwater	
PVOCs[1]	X
SVOCs[2]	X
PAHs[3]	X
Total and Dissolved Metals[4]	X
Available Cyanide	X
Soil Gas	
PVOCs[1]	X[6]
Naphthalene	X[6]

NOTES:

1. PVOC list of COPCs - benzene, ethylbenzene, toluene, m&p-xylenes, o-xylene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

2. SVOC list of COPCs - 2,4-dimethylphenol, 2-methylphenol, 3&4-methylphenol, phenol, carbazole and dibenzofuran.

3. PAH list of COPCs - acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(ghi)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene and 2-methylnaphthalene.

4. Metal list of COPCs - antimony, arsenic, cadmium, chromium, lead, mercury, nickel, selenium, and thallium

5. PCBs to be collected at specific locations (TSB111 and MSB103) on Parcels M and T.

6. On Parcel T, soil vapor samples will be completed as part of initial field work.

X - Parameter selected as COPC
COPC - Constituents of potential concern
PAH - Polycyclic aromatic hydrocarbon
PCB - Polychlorinated biphenyl
PVOC - Petroleum VOC

ATTACHMENTS

ATTACHMENT C-1: TABLE 1 OF THE USEPA-APPROVED MULTI-SITE RISK ASSESSMENT FRAMEWORK (RAF) – MGP-RELATED CONTAMINANTS OF POTENTIAL CONCERN, FORMER MGP SITES, EPA REGION 5

Table 1. MGP-related contaminants of potential concern, former MGP sites, EPA Region 5

PAHs	PVOCs	Inorganic Compounds	Acid Extractable Organic Compounds
Naphthalene	Benzene	Aluminum	2,4-Dimethylphenol
C1-Naphthalenes[a]	Ethylbenzene	Antimony	2-Methylphenol
C2-Naphthalenes[a]	Toluene	Arsenic	4-Methylphenol
C3-Naphthalenes[a]	Xylenes (Total)	Barium	Phenol
C4-Naphthalenes[a]	1,3,5-trimethylbenzene	Cadmium	
Acenaphthylene	1,2,4-trimethylbenzene	Chromium	
Acenaphthene		Copper	
Fluorene		Cyanide	
C1-Fluorenes[a]		Iron	
C2-Fluorenes[a]		Lead	
C3-Fluorenes[a]		Manganese	
Phenanthrene		Mercury	
Anthracene		Nickel	
C1-Phenanthrenes/Anthracenes[a]		Selenium	
C2-Phenanthrenes/Anthracenes[a]		Silver	
C3-Phenanthrenes/Anthracenes[a]		Vanadium	
C4-Phenanthrenes/Anthracenes[a]		Zinc	
Fluoranthene			
Pyrene			
C1-Fluoranthenes/Pyrenes[a]			
Benzo[a]anthracene			
Chrysene			
C1-Chrysenes[a]			
C2-Chrysenes[a]			
C3-Chrysenes[a]			
C4-Chrysenes[a]			
Benzo[b]fluoranthene			
Benzo[k]fluoranthene			
Benzo[e]pyrenea			
Benzo[a]pyrene			
Perylene[a]			
Indeno[1,2,3-cd]pyrene			
Dibenzo[a,h]anthracene			
Benzo[g,h,i]perylene			
2-Methylnaphthalene			

Note: EPA - U.S. Environmental Protection Agency
PAH - polycyclic aromatic hydrocarbon
PVOC - petroleum volatile organic compounds

[a] Additional PAHs to be analyzed in sediment only for comparison to *Equilibrium Partitioning Sediment Benchmarks* (U.S. EPA 2003).

APPENDIX D

SITE-SPECIFIC MODIFICATIONS TO MULTI-SITE DOCUMENTS

APPENDIX D1

SITE-SPECIFIC QUALITY ASSURANCE PROJECT PLAN

D1 SITE-SPECIFIC QUALITY ASSURANCE PROJECT PLAN

This appendix provides site-specific elements as identified in the Integrys Business Support, LLC (IBS) Multi-Site Quality Assurance Project Plan (QAPP). Unless specifically noted otherwise, the Multi-Site QAPP will be followed while implementing the Site-Specific Work Plan (SSWP) at the Crawford Station Site. This appendix references the Multi-Site QAPP sections which may require site-specific elements.

Section 1.1 – Introduction

The Multi-Site QAPP addresses all of the activities to be performed at the Crawford Station Site.

Section 1.3 – Problem Definition/Background Information (A5)

Soil vapor, related to vapor intrusion into buildings, is considered a media of potential concern for buildings on the site. The soil vapor sampling approach is provided in Section 6.6 of the Site-Specific Work Plan (SSWP) with additional details on the evaluation in Appendix F of the SSWP.

Section 1.4 – Project/Task Description and Schedule (A6)

Refinement of the Data Quality Objectives (DQO) presented in the Multi-Site QAPP are presented in Section 5.1.3 of the SSWP. Several activities described in Section 1.4 of the Final QAPP are not proposed in the SSWP (e.g., geophysical investigations to assess limits of waste). The other activities will be performed.

Site-specific tasks to be performed and the sampling rationale are presented in Section 6 of the SSWP.

The project quantitation limits (PQL) presented in the Multi-Site QAPP will be used for the Crawford Station Site. Some PQLs have recently been modified due to updates to the screening levels for the IBS Multi-Site MGP Program. Prior to beginning field work, each lab will verify that they can meet the current SLs with their reporting limits.

Lab selection will be made based on lab availability prior to field team mobilization. Pace Analytical Services is a candidate for soil, sediment, and water analyses, TestAmerica Laboratories is a candidate for air, soil, sediment, and water analyses, and STAT Analysis Corporation is a candidate for soil vapor

analyses. Reporting and detection limits for the labs will be verified prior to sample collection to ensure that the Practical Quantitation Limits are met.

A site-specific sampling and analysis summary is presented on Table 2 of the SSWP, which details the media to be sampled and the constituents to be analyzed.

A site-specific schedule for implementing the remedial investigation/feasibility study (RI/FS) activities is presented in Figure 8 and discussed in Section 9 of the SSWP.

Modifications, if necessary, to the Multi-Site Conceptual Site Model (CSM) and the Multi-Site Risk Assessment Framework (RAF) are also discussed in Appendix D4 of the SSWP.

Section 1.5.3 – Step 3 Decision Inputs

As mentioned above, Table 2 summarizes the media to be sampled and the constituents to be analyzed. The PQLs presented in the Multi-Site QAPP will be used for the Crawford Station SSWP. The PQLs will be sufficiently low to compare with the SLs presented in the Multi-Site RAF and Multi-Site RAF Addendum (Exponent, 2014). In some instances, the PQL may be above the SL because commercially available techniques cannot achieve detection levels below the SLs. Section 6 of the SSWP describes the sampling devices to be used in accordance with the Multi-Site Field Sampling Plan (FSP). Modifications to the FSP are included in Appendix D3 of the SSWP.

Section 1.5.3.1 – Screening Level Ecological Risk Assessment (SLERA)

Guidance documents to be used to evaluate ecological risk are described in the Multi-Site RAF and the approach is further discussed in Section 4 of the SSWP.

Section 1.5.3.2 – Human Health Risk Assessment (HHRA)

Guidance documents to be used to evaluate human health risks are described in the Multi-Site RAF and the approach is further discussed in Section 4 of the SSWP.

Section 1.5.4 – Step 4 Investigation Boundaries

Figures 2 and 3 of the SSWP depict the site boundaries and zoning. Ownership information for the various parcels comprising Group III is provided in Section 2.1 of the SSWP. Figures 6A through 6F and 7 provide proposed sampling locations. Sample volumes required for laboratory and toxicity testing are

provided on Table 2 of the SSWP. As mentioned above, the sampling rationale is presented in Section 6 of the SSWP.

Section 1.5.8 Measurement Performance Criteria

The laboratory selection process and options are discussed in Section 6.9 of the SSWP. Labs expected to be considered for this work are those approved in the Multi-Site QAPP, and include Pace Analytical, TestAmerica and STAT Analysis Corporation for analysis of chemical samples of soil, groundwater, soil vapor, surface water, and sediment. Lab selection will be made based on lab availability prior to field team mobilization. Modifications, if any, will be provided to USEPA for review and approval in accordance with the Administrative Order on Consent/Statement of Work (AOC/SOW).

Section 2.1.1 Schedule

A site-specific schedule for implementing the remedial investigation/feasibility study (RI/FS) activities is presented in Figure 8 and discussed in Section 9 of the SSWP.

Section 2.1.2 Sampling Design Rationale

Table 2 summarizes the media to be sampled and the constituents to be analyzed. Appendix C and F of the SSWP provide additional discussion of the constituents to be analyzed. Section 6 of the SSWP discusses rationale for selection of sampling locations.

Section 2.3.1.3 Sample Container, Volume, Preservation and Holding Time

Table 2 summarizes the sample containers, volume, preservation and holding times for the media to be sampled and the constituents to be analyzed.

Section 2.4 Analytical Methods Requirements (B4)

Table 2 summarizes the parameters to be analyzed.

APPENDIX D2

SITE-SPECIFIC HEALTH AND SAFETY PLAN

NATURAL RESOURCE TECHNOLOGY
ENVIRONMENTAL CONSULTANTS

300 SOUTH WACKER DRIVE, SUITE 2050
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(F) 414.837.3608

SITE-SPECIFIC HEALTH AND SAFETY PLAN

CRAWFORD STATION MGP SITE – RI GROUP III
3500 SOUTH PULASKI ROAD
CHICAGO, COOK COUNTY, ILLINOIS

Project No: 2066

Prepared for:

Integrys Business Support, LLC
200 E Randolph Street, 24th Floor
Chicago, Illinois 60601

Prepared by:

Natural Resource Technology, Inc.
300 South Wacker Drive, Suite 2050
Chicago, Illinois 60606

August 5, 2014

Tracy L. Hofmann, PE
Senior Engineer

Steve G. Wiskes
Health and Safety Manager

SECTION A - HEALTH AND SAFETY PLAN SUMMARY

A copy of this Health and Safety Plan (HASP) will be maintained on site during field activities and updated as deemed necessary by the Project Manager.

SITE INFORMATION

Crawford Station MGP Site – RI Group III
3500 South Pulaski Road
Chicago, Cook County, Illinois

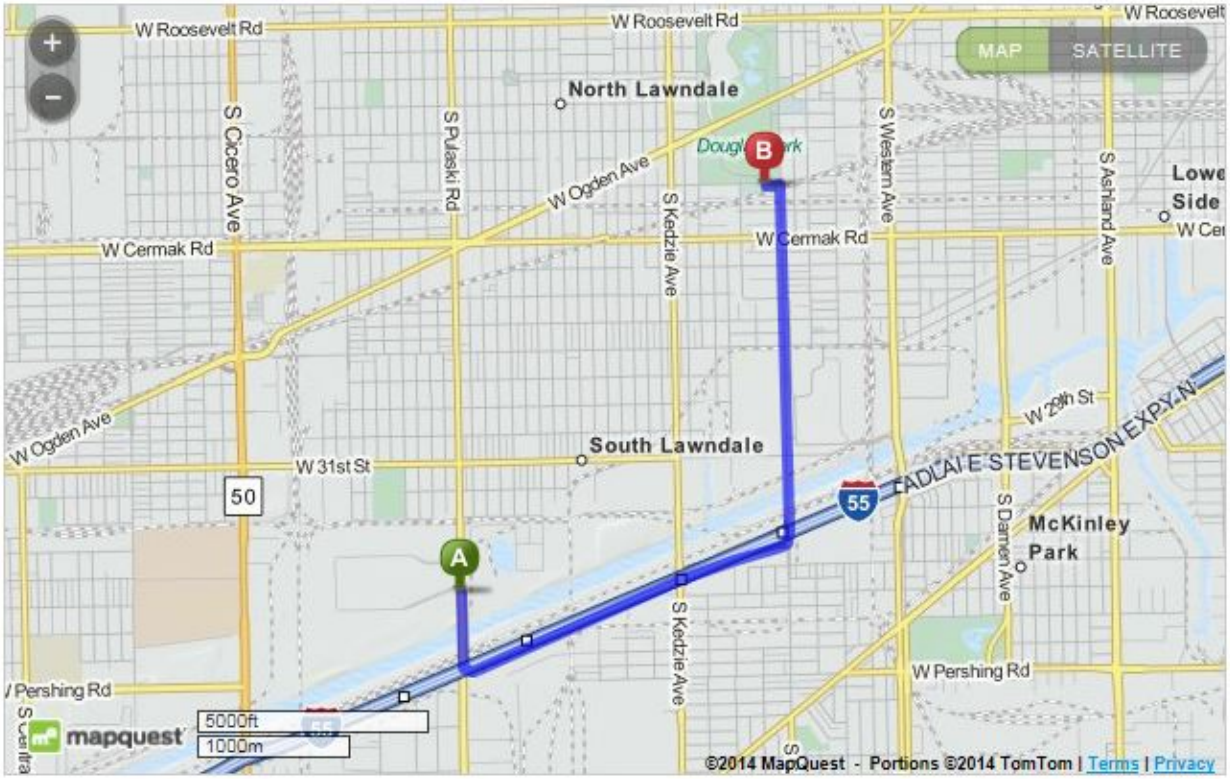
The Site (RI Group III) is bounded to the north by Parcel D and L within the Crawford Station MGP Site, to the east by Parcel L and O within the Crawford Station MGP Site, to the south by Parcel O within the Crawford Station MGP Site, and to the west by Parcel B within the Crawford Station MGP Site.

HOSPITAL INFORMATION

Saint Anthony Hospital
2875 West 19th Street
Chicago, Illinois 60623

(773) 521-1710

Route to Hospital Map



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HOSPITAL ROUTE DESCRIPTION

1. Go SOUTH on South Pulaski Road. (0.3 miles)
2. Merge onto I-55 NORTH via the ramp on the left. (1.1 miles)
3. Take the California Avenue exit, EXIT 289. (0.3 miles)
4. Turn LEFT onto South California Avenue. (1.7 miles)
5. Turn LEFT onto West 19th Street. (0.1 miles)
6. Hospital will be on the left at 2875 West 19th Street in Chicago, Illinois.

EMERGENCY CONTACT LIST

	Agency Name and Address (if applicable)	Contact Number(s)
Fire Dept:	Chicago Fire Department	Emergency: 911 General: 312.745.3705
Police:	Chicago Police Department	Emergency: 911 General: 312.744.4000
Sheriff:	Cook County Sheriff's Department	Emergency: 911 General: 312.603.6444
Local Utilities:	Chicago DIGGER	312.744.7000
NRT PM:	Tracy Hofmann	Office: 773.796.4367 Cellular: 630.251.4444
Ambulance	911	911
Hospital:	Saint Anthony Hospital	Emergency: 911 General: 773.521.1710

Description of Site:
The Crawford Station MGP Site, or more specifically, RI Group III, is comprised of the upland area upon which historic MGP operations occurred as well as portions in which MGP residuals are present. RI Group III consists of Parcels I, J, M, N, and T.

The Crawford Station MGP Site – RI Group III is comprised of the following parcel numbers and addresses:

Parcel Name	Address*	PIN(s)*	Current Owner	Current Occupant(s)*
I	3559 S. Kostner Ave.	16-34-400-017-0000 16-34-302-024-0000	Kostner/ Chicago LLC	LaGROU Distribution
J	3721 S. Kildare Ave. 3520 S. Kostner Ave 3824 S. Kostner Ave.	16-34-400-007-0000 16-34-302-025-0000 16-34-302-010-0000	RLR Investments, LLC	R+L Carriers
M	3645 S. Kildare Ave.	16-34-400-009-0000	UIR Campus and Tower, LLC	Truck Storage (unknown entity)
N	4301 W. 36th St.	16-34-400-006-0000 16-34-400-018-0000	RLR Investments, LLC	R+L Carriers
T	3700 S. Keeler Ave.	16-34-400-005-0000	UIR Campus and Tower, LLC	Multiple Occupants

Health and safety hazards at RI Group III with regard to **soil** include:

- PVOCs, which includes benzene, ethylbenzene, toluene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- SVOCs, which includes carbazole and dibenzofuran.
- PAHs, which includes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g.h.i)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-c,d)pyrene and 2-methlynaphthalene.
- Metals, which includes total arsenic, total lead, and total thallium.
- Additional compounds, which includes total cyanide.

Health and safety hazards at RI Group III with regard to **groundwater** include:

- PVOCs, which includes benzene, ethylbenzene, toluene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- SVOCs, which includes carbazole and dibenzofuran.
- PAHs, which includes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g.h.i)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-c,d)pyrene, and 2-methlynaphthalene.
- Metals, which includes total antimony, total arsenic, total cadmium, total chromium, total lead, total nickel, total selenium, and total thallium.
- An additional compound, available cyanide.

Health and safety hazards at RI Group III with regard to **soil vapor** include the following:

- 1,1,1-trichloroethane, acetone, methyl ethyl ketone, methyl-tert-butyl-ether, styrene, tetrachloroethene, trichloroethene, benzene, ethylbenzene, toluene, total xylenes, naphthalene, 1,3,3-trimethylbenzen and 1,2,4-trimethylbenzene.

Activities:
Surface and subsurface soil characterization will be achieved by completing soil borings by the use of hydraulic, direct-push boring technology (e.g., GeoProbe), hollow stem auger, vacuum excavation, and/or by hand-driven soil augers. If bedrock drilling is required, air-hammer, wire-line coring, or sonic drilling methods may be used. The area is expected to contain urban contamination typical of a developed industrialized area and impacts related to the former MGP facility. Drilling will be done by a qualified contractor. Hand-driven soil auger borings may be completed by an NRT/Integrys Business Support, LLC (IBS) contractor. Drill cuttings and decontamination water from the activities will be containerized, and disposal will be coordinated by the NRT/IBS contractor. If areas are to be investigated via a test pit, proper excavation safety procedures will be followed including maintaining a safe distance from the excavation per the Competent Person, providing a barrier to the open excavation, and filling in the test pit upon investigation activity completion.

Groundwater characterization will be achieved by installing groundwater monitoring wells by use of hydraulic, direct-push boring technology (e.g., Geoprobe) or hollow stem auger. If bedrock drilling is required, air-hammer, wire-line coring, or sonic drilling methods may be used. The area is expected to contain urban contamination typical of a developed industrialized area and impacts related to the former MGP operations. Drilling will be done by a qualified contractor. Well development and groundwater sampling purge water and drilling cuttings from the activities will be containerized and disposal will be coordinated by the NRT/IBS contractor. Groundwater sampling will be completed for all wells using a peristaltic pump, bladder pump, or bailer and coordinated by the NRT/IBS contractor.

Soil vapor will be characterized by construction of soil vapor probes in boreholes created using one of the soil coring methods described above or constructed by the NRT/IBS contractor using hand tools. Vapor probes will be sampled by the NRT/IBS subcontractor. Leak testing will be completed using a helium shroud. Samples will be collected in vacuum canisters and submitted to an analytical laboratory using courier service.

Site activities (drilling, groundwater sampling, soil sampling, soil vapor sampling, etc.) detailed in the Site-Specific Work Plan (SSWP), will be discussed during Daily Tailgate Safety Meetings. Daily Tailgate Safety Meetings will cover the appropriate personal protective equipment (PPE) to be used, and identify hazards associated with the site activities planned for that day and hazards common to the area (bugs, snakes, heat, cold, sunburn, frostbite, poison ivy, etc.). Attendance of Daily Tailgate Safety Meetings is required for all personnel working on the site. In addition, anyone visiting the site is required to go through a health and safety briefing, have HAZWOPER training and wear all required PPE. If a site visitor is not up to date on HAZWOPER training they must be accompanied by site personnel whenever they enter the exclusion zone.

HEALTH AND SAFETY MONITORING / LABORATORY AND FIELD ANALYSIS:

Air Monitoring:

In general, a photoionization detector (PID) will be used to monitor air quality in the work zone and breathing zone during site investigation activities on an as-needed basis, to be determined by the on-site lead. Potential tasks requiring use of the PID are listed in Table 1. Use of the PID may be periodic during soil boring and sampling. Specific VOC sources at the site include, but are not limited to, the potential for tar and tar-like material at depth.

Actions levels for the PID are compound specific and are listed in Appendix C. Air monitoring and respirator use are discussed in more detail in Section 7.3. Benzene and naphthalene typically have the lowest action levels at MGP sites.

Laboratory **soil** samples may be analyzed for:

- PVOCs, which includes benzene, ethylbenzene, toluene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- SVOCs, which includes carbazole and dibenzofuran.
- PAHs, which includes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g.h.i)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-c,d)pyrene and 2 methylnaphthalene.
- Metals, which includes total arsenic, total lead, and total thallium.
- Additional compounds, which includes total cyanide.

Laboratory **groundwater** samples may be analyzed for:

- PVOCs, which includes benzene, ethylbenzene, toluene, total xylenes, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- SVOCs, which includes carbazole and dibenzofuran.
- PAHs, which includes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g.h.i)perylene, benzo(k)flouranthene, chrysene, dibenz(a,h)anthracene, flouranthene, flourene, indeno(1,2,3-c,d)pyrene and 2 methylnaphthalene.
- Metals, which includes total antimony, total arsenic, total cadmium, total chromium, total lead, total nickel, total selenium, and total thallium.
- An additional compound, available cyanide.

Laboratory **soil vapor** samples may be analyzed for:

- 1,1,1-trichloroethane, acetone, methyl ethyl ketone, methyl-tert-butyl-ether, styrene, tetrachloroethene, trichloroethene, benzene, ethylbenzene, toluene, total xylenes, naphthalene, and 1,2,4-trimethylbenzene tetrachloroethene, and 1,3,5-trimethylbenzene.

EQUIPMENT, PRESERVATIVES, CALIBRATION MATERIAL, DECONTAMINATION CHEMICALS:

- Air Monitoring Equipment – with lithium ion battery
- Soil ,sediment, and water samples preserved with ice
- Soil samples preserved with methanol
- Treatment water sample preserved with ice and/or nitric acid (HNO_3), sulfuric acid (H_2SO_4), hydrochloric acid (HCL), or sodium hydroxide (NaOH)
- Field Chemicals including bug repellent spray or cream (e.g., Off) and sun screen
- First Aid Kit including eye wash sterile solution, rapid aid instant cold pack, PVP iodine scrub solution, burn spray, hydrocortisone cream 1%, neomycin antibiotic ointment, antiseptic spray
- Equipment decontamination with Alconox
- Isobutylene calibration gas for the PID

Material Safety Data Sheets (MSDSs) for the materials listed above are included in Appendix A.

Health and Safety Hazards at the Site:

Chemical	Media	Maximum Concentration	Routes of Exposure
Volatile Organic Compounds	Soil, Sediment, Vapor, Water	Potential for tar, high levels of contaminants	Inhalation, ingestion, skin or eye contact
Semivolatile Organic Compounds	Soil, Sediment, Vapor, Water	Potential for tar, high levels of contaminants	Inhalation, ingestion, skin or eye contact
Metals	Soil, Sediment, Water	Moderate	Inhalation, ingestion, skin or eye contact
Cyanide	Soil, Sediment, Water	Moderate	Inhalation, ingestion, skin or eye contact

The safety coordinator/emergency coordinator will be the NRT staff personnel supervising the field investigation/work.

Protective Equipment/Instruments:
In general, PPE will be used as specified on Table 1 for the anticipated project tasks. The health and safety manager and/or the project manager may require additional PPE based on field conditions or additional data collection.

Safety Equipment:

First Aid Kit in field vehicles

Fire extinguisher in all vehicles

Portable eyewash station

DISTRACTED DRIVING ACTIVITY PROHIBITIONS

Driving in Illinois while using a cell phone is illegal for:

- Learner's permit holders.
- Drivers younger than 19.
- School bus drivers.
- All drivers while operating in school and construction zones.

Illinois is also one of six states in which localities are allowed to ban cell phone use for all drivers. Currently, there are 75 municipalities throughout Illinois, including **Chicago, with cell phone bans, regardless of age. All drivers of all ages are banned from texting.** Regardless of whether or not it is illegal for you to use a cell phone while driving, it's important to be cautious when making calls. Distracted driving can be a significant safety hazard, especially when you're traveling in heavy traffic or under poor weather conditions.

NRT prohibits all driving distraction activities; including eating, grooming, reading, text messaging, taking notes, internet access, and media viewing related activities when driving NRT owned or rented vehicles, whether driving for business or personal reasons.

The use of cellular phones for conversation should be reserved as a non-driving activity or limited with the following guidelines:

- The first priority during cell phone use is safe driving. Never allow a phone conversation to distract you from concentrating on driving.

- Always follow restrictions and bans for the state and municipality you're traveling in; the following link has a summary of State laws http://www.ghsa.org/html/stateinfo/laws/cellphone_laws.html.

- If it's unsafe for you to answer a call, let your voice-mail pick it up.

- Use a headset while driving, or pull over to use a handheld phone. NRT will provide a hands-free accessory of NRT's choosing, for your cell phone if the accessory did not come with your cell phone.

- Keep conversations short and suspend the call in serious circumstances (e.g., heavy traffic, stop-and-go traffic, maneuvering around hazards, severe weather conditions).

- Avoid placing calls while moving; use speed dialing when making calls and strive to plan calls before driving is started. When dialing manually without the speed-dialing feature, dial only when the vehicle is stationary.

- When receiving a call, inform the caller that you are driving and will suspend/end the call without notice if traffic conditions become hazardous in any way. If possible, ask a passenger to make the call for you or at least dial the number for you.

- If you're talking while driving, keep your head up, your eyes on the road, and frequently check the side and rearview mirrors.

- To obtain roadside assistance or report emergencies, use 911 and give exact location, nature of emergency, name, and number.

Reporting
Report all cell phone near-misses and accidents on the NRT Accident/Near-Miss Reporting Form included in Appendix B.

Table 1. Summary of PPE By Sampling Activities

PPE Required	Site Reconnaissance/Field Mobilization	Drilling (monitoring wells/vapor probes/bore holes)	Monitoring Well Development and Conductivity Testing	Groundwater Levels and Sampling	Soil Sampling (heavy equipment or drill rig)	Soil Sampling (hand augers or shovels)	Vapor sampling	Test Pit Excavation/Trenching	Subsurface structure inspection (from surface)
Steel-Toed Boots (Rubber)		Av	Av	Av	Av	Av		Av	Av
Steel-Toed Boots (Leather)	X	X	X	X	X	X	X	X	X
Hard Hat		X			X			X	X
Safety Glasses/Goggles	X	X	X	X	X	X	X	X	X
Gloves-Inner (Nitrile)	Av	X	X	X	X	X	X	X	Av
Gloves-Outer (Nitrile)		X	X	X	X	X	X	X	
Orange Vest	X	X	X	X	X	X	X	X	X
Tyvek Coverall		Av			Av	Av	Av	Av	
Saranex Coverall									
Half-Face Respirator					Av	Av	Av	Av	
Respirator Cartridge (Hepa with Org. Vapor)					Av	Av	Av	Av	
Photoionization Detector (PID)		X	X	X	X	X	X	X	X
Combustible Gas Meter (CGM)									X
Other									

Key: X = PPE Required
Av = Have available at work site
Glove types may be altered based on field conditions to include Vinyl, Neoprene, and/or Latex
“Other” required or to be available PPE will be identified for each task in the Site-Specific Work Plan.

Crawford Station Site – RI Group III
NRT Project Number 2066
FIELD HEALTH & SAFETY PLAN REVIEW
I HEREBY CERTIFY THAT I HAVE READ AND UNDERSTOOD ALL HEALTH AND SAFETY PROCEDURES AS STATED HEREIN:

Name and Affiliation (printed)	Signature	Date

Daily Health and Safety Tailgate Meeting

Date _____

Time _____

Site _____

Job Number _____

Work to be Performed _____

_____

Health and Safety Topics Discussed _____

_____

Attendees

Name (printed)	Signature	Company
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Safety Officer Conducting Meeting (print)	Signature	Company
_____	_____	_____

SECTION B - HEALTH AND SAFETY PLAN

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APPENDICES

Appendix A: Chemical Information and Material Safety Data Sheets (MSDSs)
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1 INTRODUCTION

1.1 Purpose and Scope

This document describes the health and safety procedures and requirements for the installation of borings/wells, test pit excavations, sampling of soil (surface and subsurface), groundwater, surface water and sediment and subsurface structure inspection (from ground surface). This document is intended to serve as a Multi-Site Health and Safety Plan (HASP) to ensure that the fieldwork performed by NRT is done in compliance with applicable federal, state, and local occupational safety and health regulations. Subcontractors shall be made aware of the requirements of this plan; however, subcontractors **are required to have their own plan for the health and safety of their own employees** and for following all applicable federal, state, and local regulations.

In compliance with HAZWOPER, a comprehensive work plan will be developed for each site to evaluate the logistics and resources needed to reach work objectives for site operations. The work plan will identify key individuals and their responsibilities, site activities, methods for accomplishing the objectives (sampling plans), and normal operating procedures. Site-specific work plan(s) will be available on location at the site.

1.2 Health and Safety Plan Modification Procedures

Due to varying site conditions or encountering unanticipated hazards, it may be necessary to revise the health and safety plan. Necessary plan changes that call for more stringent procedures or a higher level of personal protective equipment (PPE) may be made at any time by the Health and Safety Manager, Project Manager (PM) or Task Leader in cooperation with the Project Health and Safety Officer (PHSO). The PM should be notified at the soonest available opportunity.

Plan changes that would make safety procedures or PPE requirements less stringent may be made only upon approval of the HSM and PM.HSM). Plan changes must always be put in writing and communicated to all field personnel.

2 KEY PERSONNEL/IDENTIFICATION OF H&S PERSONNEL

2.1 Key Personnel

Responsibilities for health and safety compliance issues associated with hazardous waste operations are primarily vested in the project organization, with support from appropriate health and safety professionals on NRT's technical and administrative staffs.

2.2 Site-Specific Health and Safety Personnel and Organizational Responsibility

2.2.1 Corporate Health and Safety Manager

The Corporate Health and Safety Manager (HSM) acts as a technical resource to all NRT offices on health and safety matters. This person is responsible for ensuring that all NRT health and safety programs comply with applicable federal, state, and local statutes for safety and health protection; executive orders; operating orders; permits and regulations; and company policies and procedures. The HSM is also responsible for review and approval of all site-specific Health and Safety Plans, serves in a consultation capacity to the technical staff on health and safety-related issues, and has the authority to conduct health and safety audits.

2.2.2 Project Manager

The Project Manager (PM) is accountable for health and safety compliance on his or her projects. The PM is responsible for the technical and financial execution of the project, and has the authority to commit resources, adopt program policies and procedures, and approve expenditures and subcontracts. The PM will ensure that adequate resources are budgeted and available to implement a sound health and safety program and that appropriate technical resources are brought in to support the health and safety needs of the project. The PM will ensure that health and safety is a high priority in planning fieldwork and/or lab studies, and that adequate resources are available to develop and implement an appropriate project-specific health and safety plan.

2.2.3 Project Health and Safety Officer

The Project Health and Safety Officer (PHSO) is responsible for developing and implementing the project- or Site-Specific Health and Safety Plan. In the event a PHSO has not been identified for a specific project, the PM will assume those responsibilities. The PM is ultimately responsible for health and safety for the project. It is the responsibility of the PM to report any unsafe conditions reported by the project staff to the HSMHSM and to work cooperatively to mitigate unsafe conditions. The PHSO will also ensure compliance with health and safety requirements presented in this Plan. The PM will serve as the PHSO unless site-specific hazards are identified warranting assignment of a PHSO to the project. To meet these responsibilities, the PM/PHSO may:

- Act as a health and safety consultant to the project field staff
- Provide site-specific training to staff assigned to work at the site
- Review and confirm any changes in personal protective clothing or respiratory protection requirements
- Require the specific health and safety precautions be taken before personnel enter a site
- Restrict access to the site or a portion thereof
- Perform necessary personnel monitoring
- Stop work when the health or safety of project personnel are jeopardized and order the immediate evacuation of personnel from any area of the site
- Require personnel to obtain immediate medical attention if warranted
- Provide health and safety briefings to site visitors
- Enforce the requirements stated in the Corporate Health and Safety Manual and the project- or Site-Specific Health and Safety Plan

2.2.4 Field Team Members

NRT personnel must know, understand, and comply with the requirements of this Plan developed for their projects. Field personnel will:

- Read and understand all applicable health and safety plans
- Perform work safely
- Be aware of and alert for signs and symptoms of work-related injuries and illnesses
- Promptly report any unsafe conditions that may occur on site to the PHSO, PM, and/or HSM

2.2.5 Subcontractors

Subcontractors have primary responsibility for the health and safety of their own employees. However, NRT is required by OSHA standards (e.g., 29 CFR 1910.120) to provide information to its subcontractors on known or potential workplace hazards, as well as the methods proposed to manage the identified hazards.

It is currently OSHA policy to issue citations to prime contractors in the event that their subcontractor is found to be out of compliance with regulatory requirements. NRT may incur civil penalties as a result of non-compliance with regulatory requirements by its subcontractors and/or injuries or illnesses incurred by the subcontractor's staff. Personal injury suits have been successfully brought against prime contractors in instances where a subcontractor's employee has demonstrated that the lack of health and safety oversight on the part of a prime contractor played a role in his or her sustaining an injury or illness.

NRT intends to manage its subcontractors to protect the health and well-being of NRT staff. NRT's objective is to manage subcontractors in a way that limits NRT's and our client's liabilities related to subcontractor performance, including management of health and safety issues. To achieve this objective, a minimum level of subcontractor surveillance, with respect to health and safety issues is required.

When required by NRT, **the subcontractor must review project-specific health and safety information and hazards, and develop and implement a health and safety plan.** This plan must comply with all applicable health and safety regulations and any project-specific requirements that NRT has specified. The subcontractor must provide NRT with a copy of this plan before the start of work. NRT acceptance of the subcontractor's plan does not mean that NRT concurs with the adequacy of the plan for protection of the health and safety of the subcontractor's employees. That responsibility rests solely with the subcontractor. NRT’s review of subcontractor health and safety plans will be for the purposes of**: 1) assessing potential health and safety impacts to NRT personnel and 2) meeting NRT legal responsibilities as a prime contractor**. Any deficiencies in the subcontractor's plan or inconsistencies in proposed work practices between NRT and its subcontractor should be identified. If appropriate, these deficiencies or differences should be resolved before the work begins.

2.3 Communication

Field staff and subcontractors are both permitted to call 911 in an emergency situation. As part of preparing the Site-Specific Health and Safety Plan, 911 services will be verified for each site location. Assuming the PM is not on-site, the field staff should contact the PM as soon as possible regarding the on-site situation. It is then up to the discretion of the PM to contact the Client if the on-site situation requires.

3 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site

A historical overview of the site along with details of the project description is provided in the project Work Plan. Specific protocols for sampling, sample handling and storage, chain-of-custody, and laboratory and field analyses to be performed are described in NRT's SOPs. Quality assurance/quality control (QA/QC) procedures are structured in accordance with applicable technical standards, regulations, and guidance.

3.2 Risk Analysis-General

Personnel in the vicinity of the drilling, excavation, and sampling operations are not only subject to the hazards of direct exposure to contaminants, but also to dangers posed by machinery operation. In addition, stresses due to working in protective clothing may be encountered. Physical, chemical, and biological hazards are present to some degree at most job sites.

3.2.1 Heat/Cold Stress

Thermal Stress-Heat

At times NRT personnel are required to work in hot and humid weather conditions, when temperatures and or humidity create a heat index which may be dangerous to work in. Field personnel must dress appropriately for the weather conditions and drink fluids to stay hydrated. In addition, more frequent breaks to cool down are required when temperatures and the heat index are high. Site personnel should take breaks as often as necessary to prevent the conditions listed below. It is also very important that field staff work together (i.e.," buddy system") so that they can monitor each other for signs of heat stress. The table below calculates the heat index and provides a guide to potentially dangerous working conditions.

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

IMPORTANT: Since heat index values were devised for shady, light wind conditions, **exposure to full sunshine can increase heat index values by up to 15°F.** Also, **strong winds**, particularly with very hot, dry air, can be extremely hazardous.

The site safety officer (SSO) shall determine the extent to which heat stress monitoring and control is needed based on the guidance provided in this section. The stress of working in a hot environment can cause a variety of illnesses including heat exhaustion or heat stroke; the latter can be fatal. Persona protective equipment (PPE) (i.e., Environmental Protection Agency (EPA) Level C protection [respirators]) can increase heat stress significantly. To reduce or prevent heat stress, frequent rest periods and beverage consumption to replace body fluids and salts is required. It should be noted that heat stress can occur in people wearing regular, permeable work clothing.

Quantitative physiological monitoring for heat stress may be conducted. Physiological monitoring for heat stress includes heart rate as a primary indicator and oral temperature as a secondary indicator. The frequency of monitoring depends on the ambient temperature and the level of protection used on site. To determine the initial monitoring frequency, after a work period of moderate exertion, use the table below (source, NIOSH/OSHA/USCG/EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities):

Adjusted Temperature*	**Level D**	**Level C**
90 ^{o}F or above	After 45 minutes	After 15 minutes
87.5 to 90 ^{o}F	After 60 minutes	After 30 minutes
82.5 to 87.5 ^{o}F	After 90 minutes	After 60 minutes
77.5 to 82.5 ^{o}F	After 120 minutes	After 90 minutes
72.5 to 77.5 ^{o}F	After 150 minutes	After 120 minutes

^{o}F – Degrees Fahrenheit
*Adjusted air temperature (^{o}F) = observed temp + (0.13 x percent sunshine)
Observed temp = air temperature measured with bulb shielded from radiant heat.
Percent sunshine = the time sun is not covered by clouds thick enough to produce a shadow (100 percent = no cloud cover and a sharp, distinct shadow; 0 percent = no shadows).

Heart rate: Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle one-third and keep the rest period the same. If the heart rate exceeds the 110 beats per minute at the next rest period, shorten the following work cycle by another one-third and also monitor oral temperature.

Oral temperature: Use a clinical thermometer (3 minutes under the tongue), temperature strip or ear thermometer to measure the temperature at the end of the work period (before drinking). If the temperature exceeds 99.6 F, shorten the next work cycle by one-third without changing the rest period. If the temperature exceeds 99.6 F at the beginning of the next rest period, shorten the following work cycle by one-third. ***DO NOT*** allow a field team member to wear EPA Level C protection when the measured temperature exceeds 100.6 F.

Personnel will pay particular attention to the information in this section in order to recognize the symptoms of heat stress and the appropriate action to take upon recognition. Even though physiological monitoring is not always necessary, it is essential that personnel understand the significance of heat stress and its recognition.

Symptoms that indicate **heat exhaustion** are:

- Clammy skin
- Weakness, fatigue
- Lightheadedness
- Confusion
- Slurred speech
- Fainting
- Rapid pulse
- Nausea (vomiting)

If these conditions are noted, the following steps should be taken:

- Remove the victim to a cool and uncontaminated area
- Remove protective clothing
- Give water to drink, if conscious.

Symptoms that indicate **heat stroke** include:

- Staggering gait
- Mental confusion
- Hot skin, high temp (yet may feel chilled)
- Convulsions
- Unconsciousness
- Incoherent, delirious

If heat stroke conditions are noted, immediately perform the following steps:

- Remove victim to a cool, uncontaminated area
- Cool the victim, whole body, with water, compresses and/or rapid fanning
- Give water to drink, if conscious
- Transport the victim to the designated medical facility for further cooling and monitoring of body functions. ***HEAT STROKE IS A MEDICAL EMERGENCY!***

Sunburns are another hazard of performing outdoor work. If hard hats are not necessary, team members should consider a brimmed hat and possibly neck flaps. Many weather reports now include an ultraviolet index to aid in the determination to apply sunscreen. When using sunscreen it is important to get one with a sun protection factor of about 30. Apply the sunscreen at least 30 minutes prior to going outdoors and reapply during the day. The SSO is responsible for ensuring that sunscreen is brought to the site and available for use.

It is also important to stay hydrated by drinking water and sports drinks with electrolytes to replenish salts lost through perspiration. Avoid caffeinated drinks when trying to stay hydrated because caffeine is a diuretic which is counter-productive to hydration.

Thermal Stress - Cold

On days with low temperature, high winds, and humidity, anyone can suffer from the extreme cold. Severe cold exposure can be life threatening. Several factors increase the harmful effects of cold: being very young or very old, wet clothing, having wounds or fractures, smoking, drinking alcoholic beverages, fatigue, emotional stress, and certain diseases and medications.

Cold weather injuries may be local or systemic. Local cold weather injuries include chilblains (chronic injury of the skin and peripheral capillary circulation) and frostbite. Frostbite occurs in three progressive stages: frostnip, superficial frostbite, and deep frostbite. Systemic cold injuries, due to hypothermia, affect the entire body system. Hypothermia is caused by exposure to cold and is aggravated by moisture, cold winds, fatigue, hunger, and inadequate clothing or shelter. Precautionary measures that will be taken include the following:

- Providing field shelters or windscreens
- Monitoring temperature and wind speed to determine appropriate cold stress personal safety measures
- Adjusting work schedule based on weather conditions and temperature
- Providing insulated clothing for field workers
- Adhering strictly to the buddy system so that workers can assess cold stress symptoms in their co-workers
- Providing chemical hand and feet warmers

The following table provides temperature, wind, and wind chill relationships:

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

Field personnel must be cognizant of wind chill factors and take necessary precautions to prevent frostbite. The following are work/warm-up guidelines for working in cold temperatures and with associated wind chill factors. Please note these are only guidelines and field personnel should take warm-up breaks as often as necessary to prevent cold stress situations.

THRESHOLD LIMIT VALUES WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT*

Air Temperature Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
° C (approx)	° F (approx)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	-15° to -19°	(Norm breaks) 1		(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4
-29° to -31°	-20° to -24°	(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35° to -37°	-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38° to -39°	-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -42°	-40° to -44°	30 min.	5	Non-emergency work should cease							
-43° to below	-45° & below	Non-emergency work should cease									

*Source: Adapted from Threshold Limit Values (TLV) and Biological Exposure Indices (BEI) booklet: published by ACGIH, Cincinnati, Ohio, 2008

Frostbite Monitoring: Frostbite is a potentially crippling condition that can occur when inadequately protected skin or body parts are subjected to freezing weather. All team members should continually be alert for signs of frostbite in coworkers and bring it to the attention of the site safety officer (SSO). A cold feeling, pain, and numbness precede the onset of frostbite. Frostbite usually appears as gray or white waxy spots on skin. Areas most susceptible are nose, ears, and cheeks. The following steps should be taken to avoid frostbite:

- Dress warmly (avoid cotton, wear polypropylene, wool, Gore-Tex, or other moisture wicking materials instead)
- Wear at least three layers of clothing. An inner layer of wool, silk, or synthetic to wick moisture away from the body. A middle layer of wool or synthetic to provide insulation even when wet. An outer wind and rain protection layer that allows some ventilation to prevent overheating.
- Wear a hat or hood. Up to 40% of body heat can be lost when the head is left exposed.
- Keep boots and gloves loose fitting
- Stay dry; carry extra clothing
- Avoid touching cold metal with bare hands
- Avoid spilling cold fuel, alcohol, or other liquids that freeze below 32 °F on your body or clothing

If a person suffers frostbite, get them to a hospital as soon as possible. If transport to a hospital is not immediately available, get the person to a warm shelter and immediately perform the following:

- Cover exposed areas with additional clothing while still exposed to the elements
- Wrap the person in blankets or a sleeping bag
- Give the person warm drinks (no liquor)
- Undress the frozen part and submerge the frozen part in a tub of warm water (102 °F to 105 °F), or put the frostbitten person in a large tub of warm water, if available, and stir the water.
- Warm with skin to skin contact, such as placing warm hands on frozen nose or ears, but do <u>not</u> rub
- Get the person to a hospital as soon as possible

Do ***not*** allow the following to occur:

- Do not rub the frozen part
- Do not give the person liquor

- Do not allow the person to walk on thawed feet
- Do not let the person smoke
- Do not break any blisters that may form
- Do not let the thawed part freeze again
- Do not warm the frozen part in front of a source of dry heat (e.g., open fire or oven)

Hypothermia Monitoring: Hypothermia is a lowering of the body's temperature due to exposure to cold or cool temperatures. All team members should continually be alert for signs of hypothermia in co-workers and bring it to the attention of the SSO. Most cases of hypothermia occur at temperatures between 30 °F and 50 °F. If not properly treated, hypothermia can cause death. Safety equipment for hypothermia should include a synthetic sleeping bag and a hypothermia thermometer. ***HYPOTHERMIA IS A MEDICAL EMERGENCY!*** Transport to a hospital as soon as possible, even if victim appears to be recovering.

To prevent hypothermia:

- Eat well prior to exposure.
- Dress warmly (avoid cotton, wear polypropylene, wool, Gore-Tex, or other moisture wicking materials instead).
- Avoid becoming wet due to sweating, rain or snow, or falling in water.

Early signs of hypothermia may include:

- Violent shivering.
- Slurred speech.
- Decrease in coordination.
- Confusion, inability to answer simple questions.
- Unusually irritable behavior.
- Strange behavior.
- Tendency to drop or lose clothing or equipment.

As hypothermia progresses into more serious stages, victims typically:

- Develop trouble seeing clearly.
- Become sleepy and numb.
- Move with difficulty.

- Eventually become unconscious if not properly cared for.

The following actions should be taken to treat a hypothermia victim:

- Get the victim to a warm, dry shelter as soon as possible
- Remove any wet or cold garments and dry the person thoroughly
- Wrap the victim in blankets, sleeping bags, or dry clothing to prevent more heat loss
- If a warm area is not available:
    - Build a shelter and put the victim in the warmest, driest area available
    - Remove any wet or cold garments
    - Have one or more persons remove their clothing and lay next to the victim, providing skin to skin contact
- Wrap the victim and rescuers in dry warm blankets, sleeping bags, or clothing
- When the victim becomes conscious, place warm objects along the victim's sides to warm vital areas.
- When the victim is able to swallow easily, provide warm, sweetened drinks and food (preferably candy or sweetened food)
- Do not give the victim alcohol or allow smoking
- Do not rub the victim's skin

Keep checking the victim and give additional assistance as needed

3.2.2 Slips, Trips, and Falls

The most common hazards that will be encountered on a jobsite will be slips, trips, and falls. Common sense will be used to avoid these hazards. When working on slippery surfaces, tasks will be planned to decrease the risk of slipping. Slippery surfaces will be avoided, work and travel will not be hurried, and good housekeeping will be maintained. It is not advisable to walk and talk on a cell phone at a job site, if possible. It is also not advisable to text while walking on a job site. Personnel must vigilantly observe where they are working and walking to avoid slips, trips, and falls.

3.2.3 Vehicular Traffic

Another common hazard that will be encountered at many sites will be vehicle traffic, including cars, trucks, drilling rigs and heavy machinery. When it is necessary to move a vehicle, site drivers must be mindful that pedestrians are present on site. If appropriate, site personnel on foot may guide site drivers while moving vehicles to alert and protect non-site personnel. Site personnel on foot must avoid standing

in blind spots or in high traffic areas, be aware of vehicle locations, and make eye contact with site drivers if crossing the path of vehicles is necessary. Site personnel on foot must vigilantly observe where they are working and walking to avoid being struck by vehicles which, for one reason or another, are moving. Finally, when working in high traffic areas (e.g., on the edge or in the middle of city streets, heavily used parking areas) site personnel are required to set up traffic cones and wear orange traffic safety vests to alert drivers to their presence.

Work performed in rail yards or along railroad tracks poses an additional hazard. Numerous incidents have occurred when working between or alongside rail lines and have resulted in serious injury or death. Therefore, the following rules must be followed when working near rail lines:

- Never walk or step on a railroad track; tracks can be slick and injury due to slipping off a track is possible.
- Never run over tracks - Always Walk; tripping injuries can occur when running over the tracks which can result in serious head injuries.
- Never stand between the tracks; when necessary, walk across the railroad tracks and stand to one side or the other of a rail line.
- Always wear a hard hat, eye protection, steel-toed boots, and an orange reflective vest for personal protection.

In addition to these rules, whenever work is done near railroad tracks or in a railroad right-of-way, the railroad company must be contacted and a flagman requested to monitor work activities. No work will be done without a railroad flagman being present unless the railroad company expressly permits it.

3.2.4 Hunting Season

It is possible field activities will be conducted during hunting seasons and may pose a risk to site workers. The hunting season dates will be reviewed prior to conducting field activities in non-urban areas. During hunting season, site workers will wear a minimum of at least 50% of the outer clothing above the waist in 100% blaze orange (faded blaze orange is not acceptable) to alert potential hunters to their presence. If site work is performed in densely vegetated locations, site personnel may post signs along access locations to indicate their presence.

3.2.5 Exposure to Excessive Noise

Overexposure to noise can result in hearing loss. If it is difficult to hear normal speech when the speaker is 3 to 4 feet from the listener, and that condition is present for more than four hours a day, it will be assumed that the noise level exceeds 85 decibels (dBA) and appropriate hearing protection will be used. The disposable "ear plug" type hearing protectors are recommended.

3.2.6 Chemical Hazards

PPE requirements are stated in Personnel Protection Section 5 of this Plan. Material Safety Data Sheets (MSDSs) for suspected contaminants present at a site are contained in Appendix A.

3.2.7 Biological Hazards

During warm weather months, potential biological hazards include venomous insects, snakebites, and poisonous plants. Appropriate safety measures, such as the use of insect repellent (with DEET) and probing of possible nesting areas, will be taken to prevent exposure to biological hazards.

Ticks are common in wooded and heavily vegetated areas in spring summer, and fall in the Midwest. The deer tick, also known as a bear tick or a blacklegged tick, is much smaller than the wood tick. Adults are about 1/8 inch long and reddish-brown in color. They live in the woods and are common along trails. Deer ticks crawl, rather than jump, so are most likely to come into contact with humans as they brush against low-lying vegetation.

Wood ticks are a type of hard tick. Male wood ticks have mottled gray backs. Females have gray coloration behind their heads. They are found in both grassy and wooded areas. Both wood ticks and deer ticks can occasionally cause illness in their hosts. The deer tick can sometimes carry Lyme disease, a serious illness which can cause a rash, fever, tiredness, and flu-like symptoms. Wood ticks can carry Rocky Mountain spotted fever, a rare but sometimes serious illness that causes a rash and severe flu-like symptoms. At the end of the day personnel should do a self-inspection for ticks to remove them. Pulling them off with tweezers works the best. Grab the tick as close to the skin as possible and pull upward with a slow steady pressure. Try not to leave the head or any mouth parts of a tick imbedded in the skin as it can transmit diseases.

Poison ivy, poison oak, and poison sumac release oil (urushiol) when the leaf or other plant parts are bruised, damaged, or burned. When the oil gets on the skin an allergic reaction, referred to as contact dermatitis, occurs in most exposed people as an itchy red rash with bumps or blisters. When exposed to 50 micrograms of urushiol, an amount that is less than one grain of table salt, 80 to 90 percent of adults will develop a rash. The rash, depending upon where it occurs and how broadly it is spread, may significantly impede or prevent a person from working. Although over-the-counter topical medications may relieve symptoms for most people, immediate medical attention may be required for severe reactions. Long sleeves and pants will provide protection from contact with poisonous plants and insects. Field personnel should familiarize themselves with poison ivy, poison oak, and poison sumac. Care should be taken to avoid contact with poisonous plants.

3.2.8 Thunderstorms and Rain

Drilling/excavation and sampling activities during electrical storms poses a hazard of electrocution by a lightning strike, and adverse working conditions, as well as high winds tipping the drill rig.
Drilling/ excavation and sampling activities will stop and the drilling rig mast will be lowered at the approach of a thunderstorm. Drilling activities during rainstorms can cause not only slippery conditions but also excess friction on cathead pulleys. This can cause dangerous conditions during drive sampling operations. Therefore, drive sampling operations will cease and, depending on the PHSO's assessment, drilling may be halted.

When drilling or using excavating equipment, if lightning is seen or thunder is heard, regardless of the distance, all drilling and excavation operations must be temporarily shut down. If possible, the mast on the rig should be lowered and connection with the drill pipe in the ground broken. Operations may not resume until all threat from lightning is over, which is at least 30 minutes after the last observed lightning or thunder. Lighting strikes are possible up to 10-miles from an obvious storm front. It is recommended to check local radar images to determine if other storms are following the one that shut operations down before resuming drilling.

3.3 Risk Analysis-Task-by-Task

Table 1. Anticipated Task Hazards

	Hazards													
					Physical									
	Chemical	Biological	Explosive	General Safety	Heat	Cold	Traffic	Noise	Slip, Trips, Falls	Heavy Equipment	Underground utilities	Overhead Power	Lines	Trench/Excavation
Site reconnaissance/field mobilization	X	X	X	X	X	X	X	X	X	X	X		X	
Well and borehole drilling	X	X	X	X	X	X	X	X	X	X	X	X	X	
Monitoring well development	X	X		X	X	X	X		X					
Groundwater level measurements	X	X		X	X	X	X		X					
Groundwater and soil sampling	X	X		X	X	X	X		X					X
Test pits and excavation	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Surface water sampling	X	X		X	X	X	X	X	X	X			X	
Sampling solid material, wipe sampling, surface sampling	X	X		X	X	X	X	X	X	X	X	X	X	
Sampling through ice	X	X		X		X	X	X	X	X			X	

3.3.1 Well and Borehole Drilling

In addition to the possibility of contact with the above listed chemicals, physical hazards associated with well and borehole drilling includes:

- Snapping cables
- Brush and equipment fires
- Being hit by equipment
- Being caught in rotating tools
- Falling objects
- Exposure to excessive noise
- Contact with energized electrical lines

3.3.2 Air Rotary Drilling

This type of drilling, in addition to the above listed hazards, may also expose field personnel to blowing dust and high-pressure airlines.

3.3.3 Groundwater, Seep, Soil, and Pipe Sampling

Collection of these samples presents inhalation and, direct skin contact hazards with the substances listed in Appendix A.

3.3.4 Drilling/Excavation near Overhead Electrical Lines

Drilling or excavation activities near overhead electrical lines present a serious electrocution hazard. Safe work distance must be maintained. This distance is a function of the humidity and the voltage present. Should work in the proximity of overhead lines be required, the minimum clearance will be determined based on OSHA standards as follows:

- Lines rated 50kV or below - minimum clearance between the lines and any part of the crane or load shall be 10 feet. (1926.550(a)(15)(i))
- Lines rated over 50 kV - minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than 10 feet (CFR 1926.550(a)(15)(ii)).

Safe working distances are as follows:

- Power line 51,000 to 138,000 volts - work at least 11 feet away
- Power line more than 230,000 volts - work at least 13 feet away
- Power line ≥500,000 volts - work at least 18 feet away

Note that humid or wet conditions (rain) are conducive to potential arcing from power lines to the piece of equipment. It is not advisable to work near power lines during humid or wet conditions.

3.3.5 Drilling/Excavation near Underground Electrical/Utility Lines

Buried electrical/utility lines present a hidden danger while drilling/excavating. The subcontractor will be responsible for contacting the local underground utility locator service (call 811 nationally for state one-call system); however, it is the responsibility of the NRT PM or PHSO to ensure that the subcontractor has contacted the appropriate locator service to ensure that site activities can be completed in accordance with the schedule. The locator service will mark underground lines to ensure safe working conditions. Drilling/excavation will not occur until the site is properly marked. Drilling/excavation will not occur within three feet of any marked utility.

3.3.6 Test Pits and Excavation

Test pits and excavations pose a serious threat of injury resulting from falls or excavation wall collapses. During excavation or digging activities an exclusion work zone will be established around excavating machinery. Bystanders and on-lookers will be prohibited from entering this work zone while the excavating machinery is in operation. The work zone will be large enough so that the excavating machinery (e.g., trackhoe) can rotate 360-degree without extending out of the work zone. After the excavation is completed it should either be backfilled immediately or the entire excavation will be encircled with a physical barrier (e.g., barricades, orange excavation fencing), which will limit access to the excavation and decrease the likelihood of injury resulting from falls. Any excavation greater than four feet deep will NOT be entered unless the walls of the excavation have been reinforced to prevent wall collapse. Entry into any excavation greater than four feet deep will constitute a confined space entry procedure. Therefore, no excavation entrance is allowed.

A photoionization detector (PID) may be used to monitor air quality in the breathing zone of the work area for volatile organic compound (VOC) vapor levels and in an excavation (See Section 7 of this plan) if VOCs are anticipated to be present. Prior to Contractor Personnel entering any excavations to install piping or any other equipment, at a minimum the PID will be lowered into the excavation to determine air quality in the excavation. Depending on the potential hazards present additional air monitoring may

include, oxygen levels, lower explosives limit, sulfide, carbon monoxide, and cyanide. Confined spaces will not be entered.

3.3.7 Operations on Surface Waters

The procedures specified in this subsection are designed to protect NRT staff when conducting work activities involving water craft vessels on surface waters. Governmental laws and regulations regarding onshore waters are under the jurisdiction of the Unites States Coast Guard (USCG) and the state regulatory agency and its regulations will be adhered to. **Always Work In Pairs – Never Conduct Work Activities Alone.**

3.3.7.1 Scope and Applicability

The procedures specified in this subsection apply to all work activities involving surface waters (including sediment sampling). The highest ranking NRT staff member (e.g., Project Manager, Field Task Leader) at the work site is responsible for implementing this plan. The work activities will not be initiated prior to receiving approval from the PM.

- Work activities can be conducted in “open water” or “ice” conditions.
- Each NRT staff person at the site is responsible for following these procedures.

3.3.7.2 Water Craft

The following procedures will be observed when NRT staff conducts work activities in “open water” conditions in a water craft vessels (including drill rigs mounted on barges):

- Work will not be initiated prior to meeting approval from the PM.
- Work activities conducted on surface waters will be conducted in accordance with the requirements of the USCG and the appropriate state agency.
- Personal Flotation Devices (PFD) that is USCG approved must be worn at all times when on surface waters. The PFD must be properly securely fastened. One adult size PFD (wearable style) for every person on the water craft is required.
- A minimum of two (2) PFDs must be on board on the water craft at all times.
- A minimum of one “throwable” flotation device w/attached line must be on board.
- Distribute weight evenly across the beam of the watercraft.
- Only allow one person to stand at a time in a small watercraft vessel.

- Do not exceed manufacture's capacity plate load limits.
- Attach a lanyard or safety line which can be tied to the sampling personnel when water surface conditions are rough. This will enable easier retrieval of the person should he/she fall over the side of the water craft.
- Check running condition of the outboard motor prior to launching (e.g., ample supply of fuel/oil mix, fuel line condition, integrity of the propeller, **EXTRA SHEER PINS** for the propeller).
- Equipment to have on board include oars, anchor with line (100 foot minimum line on inland waters) and mooring lines of adequate length.
- Wear work gloves when using equipment that could injure hands.
- Wear hard hat if overhead hazards exist (e.g., A-Frame, use of long coring devices).
- Secure overboard equipment to vessel.
- Use proper lifting techniques when retrieving heavy equipment.

3.3.7.3 Shallow Water

Site-Specific Work Plan and the site reconnaissance will evaluate the best approach to sampling in shallow water. If wading is necessary, work activities in shallow water along the shore line shall consider the following hazards:

- Use waders to minimize exposure to water, sediment contaminant exposure and heat loss.
- Proceed carefully – water currents and falling can cause the waders to fill creating a very serious condition. In addition to wearing a PFD, a safety line should be tethered to the person walking in water currents.
- Fatigue can occur more rapidly from walking through the water.

3.3.7.4 Sampling Through Ice

Collection of samples through frozen rivers/lakes presents the difficulties of working on ice. Precautions for slips, trips, and falls will be observed. Ice thickness will be at a minimum of 9-inches thick before work activities will commence.

The following procedures will be observed when NRT staff conducts work activities on "ice" conditions:

- Work activities will not be initiated prior to meeting approval from the Environmental Health & Safety Manager (EHSM).
- Know the ice (e.g., thickness) and proceed with extreme caution. Ice thickness at a minimum should be 18 to 24 inches (when conducting drilling operations) and inspected for integrity. Check

ice thickness regularly when traversing across ice to assure adequate support exists. Be especially cautious when approaching pressure cracks, areas of open water or areas of rivers where water velocity may be higher.

- Wear PFDs at all times.
- Warm weather causes ice thinning and potential for slipping (drilling holes on thinning ice can cause flooding of ice surface and can accelerate ice thinning and breakage).
- Equipment may be required to be hauled between work stations (use sleds).
- Fatigue can occur from walking and drilling holes.

Based on water currents, water temperature and the amount of clothing worn by NRT staff, the threat of being swept downstream or drowning is possible. Extreme caution must be used when conducting these types of work activities. If a NRT staff employee should fall into the water, the employee will be retrieved and all warranted precautions shall be taken to ensure the safety and well being of that individual. Work activities will be immediately suspended and the person brought to shore. Wet clothing shall be removed and the person shall be dried and dressed in a set of dry clothes. If the possibility of hypothermia exists, seek medical attention immediately.

Persons sampling contaminated or potentially contaminated materials should wear the same PPE as listed for monitoring well sampling. The required PPE will be carried along on the sediment sampling water craft. PPE can add to heat stress during warm conditions and can cause decreased mobility dexterity.

3.3.7.5 Subcontractors

It is the responsibility of the PM to require subcontractors assisting in the work activities, to adhere to state and federal governmental laws and regulations related to onshore and inland waters. Any refusal on behalf of the subcontractor will mandate shutdown of the project.

4 PERSONNEL TRAINING REQUIREMENTS

4.1 General

NRT and subcontractor employees performing field work on this project are required to have appropriate safety training as specified in the OSHA Standards, particularly the HAZWOPER Standard 29CFR1910.120. NRT personnel performing fieldwork on this project must meet the necessary general training requirements. Subcontractors are responsible for supplying NRT's PM with written statements certifying that their project personnel meet the necessary general training requirements.

4.2 Site-Specific

Site-specific hazard and hazard control information is contained in this health and safety plan. NRT personnel will be provided with a copy of this plan prior to the beginning of fieldwork. Each person will be required to "sign off" that they have read, understood, and will follow the procedures set forth in the plan.

4.3 Informational Briefings

It is the responsibility of each NRT staff member directing field operations to keep their crew members appraised of site conditions relative to health and safety, and of any approved modifications to the plan. This will be accomplished through ongoing daily "tailgate" safety meetings. NRT personnel are required to report injuries, illnesses, and unsafe conditions to their immediate supervisor. The supervisor is required to report in writing any such accidents to the HSM, PM and PHSO within 24 hours of occurrence.

5 PERSONAL PROTECTIVE EQUIPMENT

Listed in the health and safety plan summary at the very beginning of this plan are hazardous substances that have been found or are suspected to be present at the site. Hazardous substances may be found in air, soil, sediment, surface water and/or groundwater. Common routes of exposure include inhalation, ingestion, and absorption. Proper PPE should be worn when applicable.

5.1 Drilling/Excavation/Installation of Wells

Persons handling contaminated or potentially contaminated equipment, soils, sediment, or groundwater must wear the following PPE:

- Long sleeve coveralls (light or heavy weights subject to ambient temperature)
- Bib style rain pants where wet operations exist
- Nitrile gloves
- Vinyl gloves for sample handling
- Safety glasses with side-shields (REQUIRED AT ALL TIMES)
- Hard hat (REQUIRED AT ALL TIMES)
- Steel-toed boots (REQUIRED AT ALL TIMES)
- Reflective orange vest (worn as the situation warrants)
- Hearing protection (as required – see note below)

NOTE: Guidance on the requirements of ear protection is as follows: if you must raise your voice to converse with persons three feet away from you, you are probably being overexposed to noise. This roughly equates to being exposed to over 85 dbs of noise for greater than a 4 hour period. In these instances, the wearing of hearing protection is required. The muff or "EAR" type disposable earplugs will suffice.

5.2 Ground/Surface Water and Soil/Sediment Sampling

Persons sampling contaminated or potentially contaminated materials, soil, sediment, or water must wear the following PPE:

- Long sleeve coveralls (light or heavy weights subject to ambient temperature)
- Bib style rain pants where wet operations exist
- Nitrile gloves
- Vinyl gloves for sample handling
- Safety glasses with side-shields
- Steel-toed boots
- Hearing protection (as required)

Persons whose skin or inner clothing comes in contact with contaminated soils or liquids should remove such clothing, shower or clean as appropriate, then re-suit for continued work activities.

NOTE: Outer gloves should be changed or decontaminated between samples if contact to the sample occurs. This will preserve sample integrity.

6 MEDICAL SURVEILLANCE REQUIREMENTS

6.1 Medical Surveillance

The hazardous substances known or suspected to be present at the site are not known to produce injury or illness that would not be detected by the medical examination specified in the NRT Standard Practices Manual, Section 6, Health and Safety, Number 06-10. The medical monitoring program established in this section of the Standard Practices Manual complies with all OSHA guidelines regarding and necessitating medical monitoring in the work place.

7 FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING

7.1 Site Air Monitoring

A PID and possibly a combustible gas indicator (CGI) may be used to measure air contaminant concentrations in the breathing and work zones if required in the Health and Safety Plan Summary. Readings are to be recorded on the logs and in the project logbook. The PID will be calibrated per the air monitoring action plan below. If a CGI is also used to detect combustible conditions at the work site, the monitoring will also follow the plan below.

7.2 Sampling Air Monitoring

A PID may be used to measure air VOC concentrations at the well head or soil sample location during sampling or drilling operations if required in the Health and Safety Plan Summary. If measurements are collected, they should be recorded in the project logbook. These measurements may be used to upgrade or change PPE requirements and/or the methods of performing the work. The PID will be calibrated at the start of each day of use. Air monitoring should follow the action plan below.

7.3 Air Monitoring Action Plan

A PID will be calibrated and checked on a minimum basis at least three times per day: 1) before work activities begin; 2) during lunch break or approximately half way through the working day; and 3) following work activities at the end of the day. These calibration checks will be used to ensure accuracy of VOC readings. Calibration procedures will follow those outlined in the PID manual and NRT's SOPs and typically use isobutylene as the calibration gas.

The PID will be used to monitor air quality in the breathing zone of the work area for the presence of VOC vapor levels if required in the Health and Safety Plan Summary. Prior to Contractor Personnel entering any excavations to install piping or any other equipment, the PID will be lowered into the excavation to determine air quality in the excavation. Confined spaces will not be entered. Besides using the PID to monitor VOC vapors in the breathing zone, an oxygen meter and/or a CGM may also be used. The oxygen meter may be used to measure percent oxygen in any excavation and the CGM may be used to measure the explosive limit. Calibration of the combustible gas meter is required based on use to insure accuracy.

The VOCs "action level" for unknown contaminants is considered when a reading is sustained on the PID when the PID is held at a constant height, whether in the excavation or the breathing zone. If specific compounds are known to exist at the site (i.e benzene, vinyl chloride trichloroethene) actions levels will be set for the specific compound present or if several compounds are present the most conservative action level will be used. Reaching the VOC action level will require use of either full-face or half-face respirators utilizing Organic Vapor cartridge filters. Additionally, further air quality monitoring will be required to ensure that the PID readings do not exceed the upper limit. This will be done under the direction of the NRT PHSO who will determine specific modifications to work practices and PPE requirements. Draeger tubes or a compound specific meter may be used to identify specific compounds present onsite. If it is determined a specific compound is not present the PID screening action level may be changed for the specific compound present. In addition, if engineering controls at the site (i.e ventilation, moving upwind, use of foam or other cover) mitigates the PID readings to below the action levels than respirators will not be required. Refer to Appendix C for the respirator use flow chart.

If the upper limit is achieved, all activities on the site will immediately stop. The NRT PM will be contacted prior to taking any further action on the site, unless a situation exists which requires immediate action. Options such as nitrogen purging will be considered based on the most current information available.

It should be noted that action levels are determined by the contaminants present (if known). For example the action level for known petroleum contaminants (gasoline or diesel fuel) may be as indicated in the preceding paragraph. However, if chlorinated solvents are suspected to be present with much lower threshold limit values than petroleum contaminants then the action levels would be adjusted to lower values.

8 SITE CONTROL MEASURES

8.1 Buddy System

Each worker will maintain visual contact with another worker at all times. The buddy system will ensure against an employee becoming stressed with a co-worker being aware of his or her condition. Workers should watch out for each other while working close to potential chemical and physical hazards. For example, all work in the exclusion zone should be scheduled so that no employee works alone in this zone at any time.

8.2 Safe Work Practices

To prevent accidental ingestion of chemical contaminants, the following rules must be compiled with when working within the exclusion/contamination reduction zones, and when taking or handling samples.

- No eating, drinking, or smoking is allowed at work locations.
- No fires are allowed at work locations unless approved by the Project Health and Safety Officer on a site-specific, task-specific basis. If fires or propane torches are used, fires will be maintained away from potential ignition sources and site personnel will not leave the fire unattended and a fire extinguisher will be immediately available.
- NRT and contractor personnel must wash their hands, arms, face, and neck immediately after leaving the exclusion/contamination reduction zones. This must also be done after taking samples and prior to eating, drinking, smoking, or using the restroom.

8.3 Work Zone Definition

Work crews, whether drilling, excavating, or performing other activities, must prevent the uncontrolled movement of contaminated or potentially contaminated soil, water, PPE, and equipment. All soil and water removed from its natural setting should be considered contaminated unless proven otherwise by chemical analysis or specifically known to be clean material in which verification sampling is occurring. This is also the case for PPE and equipment which either must be decontaminated or disposed. Work crews will prevent migration of contaminated materials by establishing work zones and decontamination procedures. Work zones will be delineated. Only persons certified as having the necessary training and medical qualifications will be allowed in the Exclusion Zone (EZ) or Contamination Reduction Zone (CRZ). The following describes the zones to be established during drilling or excavation:

- Exclusion Zone – An EZ will be established surrounding the drilling or excavation site, if necessary and is the area where contamination does exist or could occur. The EZ will comprise an area of at least as large as a circle having a diameter equaling one half the mast height of the drilling equipment or arm of excavating equipment. The size and shape of the EZ will be determined by the PHSO. No personnel will be permitted in the EZ unless they are in full compliance with the site health and safety plan.

- Contamination Reduction Zone - This is the transition area between the exclusion zone and the support zone. It is the area where the decontamination of equipment and personnel takes place. Its purpose is to keep the support zone free of contamination.

- Support Zone: The support zone is the area free of contamination. People wear normal work clothes in this area. The personnel in this zone are responsible for organizing off-site emergency response teams in the event of an emergency.

8.4 Daily Start-up and Shutdown Procedures

The following protocols will be followed daily prior to the start of work activities:

- The PHSO will review site conditions to determine if modifications of the work and safety plans are needed.

- Personnel will be briefed and updated at the daily tailgate safety meeting on any new safety procedures based on the previous day's findings and the planned work activity for that day.

- All safety equipment will be checked for proper function.

- The PHSO will ensure that the hospital route map and first aid equipment are readily available.

- The PHSO will initiate appropriate monitoring.

The following protocol will be followed at the end of daily operations and before breaks:

- All personnel will proceed through appropriate decontamination procedures and facilities.

- The work site will be left clean. Drums will be properly labeled and staged.

- All PPE must be removed prior to eating, drinking, smoking, or using the restroom.

- Equipment will be decontaminated and properly stored.

8.5 Equipment

Drilling rigs and heavy equipment should be inspected at the start of each day to detect equipment problems. Particular attention should be paid to cables and hydraulic lines. Examine them for evidence of stretching, fraying and cracking. The fuel system and hydraulic system should be in good repair (free from leaks) to avoid the potential for fire or explosion. Kill switches should be tested and functioning properly.

The drill rig and heavy equipment should be equipped with or have stationed in the area two 20-pound type BC fire extinguishers.

8.6 Drilling/Excavation Area

The drilling/excavation area should be located away from overhead electrical lines. The location of buried water, storm and sanitary sewer, electrical, telephone, and gas utility lines must be determined and marked by the authorized personnel. Slope of terrain, stability of embankments, soil load bearing ability, etc. should be evaluated in selection of the drilling/excavation locations.

In addition, a “competent person” as defined by CFR 1926.650 (b) must be designated for excavation safety at the site:

- Competent person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them

The designated competent person has the abilities described above either through onsite experience, classroom training or the combination of both.

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9 DECONTAMINATION PLAN

9.1 Decontamination Procedures

Personal decontamination will be accomplished by using good personal hygiene. Personal contamination should not occur if the protection methods specified in this plan are used. However, the following procedures must be complied with to ensure that contamination does not remain on equipment, sample containers, or in contact with personnel.

- While in the EZ clean gross contamination off equipment by scraping or brushing. Collect all contaminated soil with the drill cuttings and transport the cuttings in an appropriate manner to the staging area on site (e.g., placed in DOT approved 55-gallon drums).
- If steam cleaning of equipment is required it will occur at the designated area on site. If capture of decontamination water is required, it will be placed in DOT approved 55-gallon drums.

After equipment and sample container decontamination is accomplished, drilling crewmembers must remove PPE before leaving the CRZ. PPE must be removed in a step-wise fashion to prevent contamination of work clothing, as follows:

- Remove all contaminated soil from work boots and remove protective clothing for decontamination or disposal. If disposable PPE is required, it should be placed in an open top drum designated for that purpose. A lid should be placed on the drum after usage. All drummed material will be labeled identifying contents and the date filled.
- Remove and wash outer gloves and hard hat. Place disposable gloves in a collection bag.
- The use of respiratory protection is not anticipated. If a respirator must be used or otherwise removed from its containers, wash it down and take it with you as you exit the CRZ.
- Final daily decontamination will be reviewed by the PHSO to ensure that no contaminated articles are accessible to the public. Therefore, all disposable PPE and other miscellaneous garbage will be stored in a drum with a secured lid.

After leaving the CRZ, and before eating, drinking, smoking, or using the restroom, all personnel must wash their hands, arms, face, and neck. In addition, all personnel should take a full-body shower at the end of the workday. A full-body shower includes the use of a wash cloth to scrub the skin.

9.2 Waste Storage and Disposal

Since all soil and water removed from its natural setting is considered potentially contaminated, these materials will be stored and disposed of according to the guidelines established in the Work Plan for the site. If no guidelines have been established in the work plan for storage and disposal of these investigative wastes, the procedures outlined in NRT Standard Practices Manual, Section 6, Health and Safety, Number 06-07.

Waste container contents and identification will be made in the field log for future reference. The number of containers will be counted and assessed for the amount of content present in each (1/2 full, full). All containers will be distinctly labeled using a paint pen or marker. At a minimum the drum will be labeled with the following information:

- Company name
- Date contents added to drum
- Contents of drum (soil, water, PPE)
- Well or soil boring identification (MW-1 or SB-1)

10 EMERGENCY ACTION PLAN

10.1 Medical Emergencies

In the event of a medical emergency, the following procedures should be used.

1. If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury, and conditions to the dispatcher. Designate a person to direct emergency responders to the injured person(s).
2. Call the project manager.
3. Implement steps to prevent the reoccurrence of the accident.

10.2 Chemical Emergencies

1. If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury, and conditions to the dispatcher.
2. Evacuate other on-site personnel to a safe place in an upwind direction until it is safe for work to resume.
3. Call the PM.
4. If necessary contact clean-up contractor.
5. If release requires contacting government agencies the PM makes the appropriate calls (PM also contacts Client).

10.3 General Emergencies

In the case of fire (other than a managed pre-approved fire, discussed in Section 8.2), flood, explosion, spills, severe weather, tank or pipe punctures, or other hazard, work shall be halted and if applicable, 911 called. All on-site personnel will immediately be evacuated to a safe place.

10.4 Accident Reports and Follow up

All accidents, including those that do not result in injury or illness, are to be reported verbally to the PHSO or the PM immediately, with written documentation within 24 hours of their occurrence. The report form is included as Appendix B. The policy specified in the NRT Standard Practices Manual, Section 6, Health and Safety, Number 06-12 regarding notification of the HSM, PHSO or PM will be followed.

11 CONFINED SPACE ENTRY PROCEDURES

No confined spaces (or the need to enter a confined space) are anticipated at the site; however, should such an issue arise (or become anticipated at a particular site), it will be addressed in the site specific work plan. Only properly trained individuals may enter or be an attendant for confined space entry and only after a confined space permit has been completed.

12 SPILL CONTAINMENT PROGRAM

No potential spill situations are anticipated on the site; however, if there is an accidental release of potentially hazardous materials or waste (e.g., spilled purge water or soil cuttings, ruptured hydraulic line), site personnel will:

- Contact the HSM, Project Health and Safety Officer and Project Manager
- Contain the spill, if it is possible and it can be done safely
- Initiate cleanup
- Report the spill to the proper authorities if the reportable quantity has been exceeded for a particular compound

Appendix A
Chemical Information / Material Safety Data Sheets (on CD only)

- Benzene
- Ethylbenzene
- Toluene
- Xylenes (M, O, & P)
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Carbazole
- Dibenzofuran
- PAHs
- Naphtha (Coal Tar)
- Cyanide
- Antimony
- Arsenic
- Cadmium
- Chromium
- Lead
- Mercury
- Nickel
- Selenium
- Thallium
- Alconox
- Hexane
- Hydrochloric Acid
- Nitric Acid
- Methanol (MeOH)
- Liquinox
- Isobutylene Calibration Gas
- Phenols
- Sodium Hydroxide

Appendix A (continued)

- Sulfuric Acid
- Nickel-Cadmium, Lithium-ion, Sealed Lead Acid, and Alkaline Batteries
- First Aid Kit Materials (Eyewash, Cold Pack, Iodine, Burn Spray, Hydrocortisone Cream, Antibiotic Ointment, Antiseptic Spray)
- OFF! Deep Woods Insect Repellent
- OFF! Skintastic Insect Repellent with Sunscreen
- Sunscreen
- AMCO Clear Turbidity Standard

BENZENE

BNZ

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Benzol
Benzole

Watery liquid Colorless Gasoline-like odor

Floats on water. Flammable, irritating vapor is produced. Freezing point is 42ÁF.

Restrict access.
Avoid contact with liquid and vapor.
Wear goggles and self-contained breathing apparatus.
Shut off ignition sources and call fire department.
Stay upwind and use water spray to ``knock down" vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

FLAMMABLE.
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear goggles and self-contained breathing apparatus.
Extinguish with dry chemical, foam, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause headache, difficult breathing, or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: C_6H_6
2.3 IMO/UN Designation: 3.2/1114
2.4 DOT ID No.: 1114
2.5 CAS Registry No.: 71-43-2
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51122

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Self contained positive pressure breathing apparatus; protective gloves and clothing.
3.2 Symptoms Following Exposure: Dizziness, excitation, pallor, followed by flushing, weakness, headache, breathlessness, chest constriction, nausea, and vomiting. Coma and possible death.
3.3 Treatment of Exposure: SKIN: flush with water followed by soap and water; remove contaminated clothing and wash skin. EYES: flush with plenty of water until irritation subsides. INHALATION: remove from exposure immediately. Call a physician. IF breathing is irregular or stopped, start resuscitation, administer oxygen.
3.4 TLV-TWA: 0.5 ppm
3.5 TLV-STEL: 2.5 ppm
3.6 TLV-Ceiling: Not listed
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Leukemia.
3.10 Vapor (Gas) Irritant Characteristics: If present in high concentrations, vapors may cause irritation of eyes or respiratory system. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 4.68 ppm
3.13 IDLH Value: 500 ppm
3.14 OSHA PEL-TWA: 1 ppm.
3.15 OSHA PEL-STEL: 5 ppm
3.16 OSHA PEL-Ceiling: Not listed
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 12ÁF C.C.
4.2 Flammable Limits in Air: 1.3%-7.9%
4.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide.
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Not pertinent.
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 1097ÁF
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 6.0 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 35.7 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 9.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction.
5.2 Reactivity with Common Materials: No reaction.
5.3 Stability During Transport: Stable.
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent.
5.5 Polymerization: Not pertinent.
5.6 Inhibitor of Polymerization: Not pertinent.

6. WATER POLLUTION

6.1 Aquatic Toxicity:
5 ppm/6 hr/minnow/lethal/distilled water
20 ppm/24 hr/sunfish/TL_m/tap water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 1.2 lb/lb, 10 days
6.4 Food Chain Concentration Potential: None.
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Industrial pure ï 99+%; Thiophene-free ï 99+%; Nitration ï 99+%; Industrial ï 90% - 85+%; Reagent ï 99+%
7.2 Storage Temperature: Ambient.
7.3 Inert Atmosphere: No requirement.
7.4 Venting: Pressure-vacuum.
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 10 pounds
8.7 EPA Pollution Category: A
8.8 RCRA Waste Number: U019
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 78.11
9.3 Boiling Point at 1 atm: 176ÁF = 80.1ÁC = 353.3ÁK
9.4 Freezing Point: 42.0ÁF = 5.5ÁC = 278.7ÁK
9.5 Critical Temperature: 552.0ÁF = 288.9ÁC = 562.1ÁK
9.6 Critical Pressure: 710 psia = 48.3 atm = 4.89 MN/m^2
9.7 Specific Gravity: 0.879 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 28.9 dynes/cm = 0.0289 N/m at 20ÁC
9.9 Liquid Water Interfacial Tension: 35.0 dynes/cm = 0.035 N/m at 20ÁC
9.10 Vapor (Gas) Specific Gravity: 2.8
9.11 Ratio of Specific Heats of Vapor (Gas): 1.061
9.12 Latent Heat of Vaporization: 169 Btu/lb = 94.1 cal/g = 3.94 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,460 Btu/lb = ï 9698 cal/g = ï 406.0 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent.
9.15 Heat of Solution: Not pertinent.
9.16 Heat of Polymerization: Not pertinent.
9.17 Heat of Fusion: 30.45 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 3.22 psia

NOTES

BENZENE

BNZ

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
55	55.330	45	0.394	75	0.988	55	0.724
60	55.140	50	0.396	80	0.981	60	0.693
65	54.960	55	0.398	85	0.975	65	0.665
70	54.770	60	0.400	90	0.969	70	0.638
75	54.580	65	0.403	95	0.962	75	0.612
80	54.400	70	0.405	100	0.956	80	0.588
85	54.210	75	0.407	105	0.950	85	0.566
90	54.030	80	0.409	110	0.944	90	0.544
95	53.840	85	0.411	115	0.937	95	0.524
100	53.660	90	0.414	120	0.931	100	0.505
105	53.470	95	0.416	125	0.925	105	0.487
110	53.290	100	0.418	130	0.919	110	0.470
115	53.100			135	0.912	115	0.453
120	52.920			140	0.906	120	0.438
125	52.730			145	0.900		
130	52.540			150	0.893		
135	52.360			155	0.887		
140	52.170			160	0.881		
145	51.990			165	0.875		
150	51.800			170	0.868		
155	51.620						
160	51.430						
165	51.250						
170	51.060						
175	50.870						

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
77	0.180	50	0.881	50	0.01258	0	0.204
		60	1.171	60	0.01639	25	0.219
		70	1.535	70	0.02109	50	0.234
		80	1.989	80	0.02681	75	0.248
		90	2.547	90	0.03371	100	0.261
		100	3.227	100	0.04196	125	0.275
		110	4.049	110	0.05172	150	0.288
		120	5.033	120	0.06317	175	0.301
		130	6.201	130	0.07652	200	0.313
		140	7.577	140	0.09194	225	0.325
		150	9.187	150	0.10960	250	0.337
		160	11.060	160	0.12980	275	0.349
		170	13.220	170	0.15270	300	0.360
		180	15.700	180	0.17850	325	0.371
		190	18.520	190	0.20750	350	0.381
		200	21.740	200	0.23970	375	0.392
		210	25.360	210	0.27560	400	0.402
						425	0.412
						450	0.421
						475	0.431
						500	0.440
						525	0.449
						550	0.457
						575	0.465
						600	0.474

BENZENE

Also known as: Benzol, Mineral Naphtha, Phenyl Hydride, Annulene
Chemical reference number (CAS): 71-43-2

WHAT IS BENZENE?

Benzene is a widely used industrial chemical. Benzene is found in crude oil and is a major part of gasoline. It's used to make plastics, resins, synthetic fibers, rubber lubricants, dyes, detergents, drugs and pesticides. Benzene is produced naturally by volcanoes and forest fires.

In homes, benzene may be found in glues, adhesives, cleaning products, paint strippers, tobacco smoke and gasoline. Most benzene in the environment comes from our use of petroleum products.

Benzene quickly evaporates from water or soil. If benzene leaks from buried storage tanks or landfills, it can contaminate nearby drinking water wells. Benzene can move long distances in groundwater.

HOW ARE PEOPLE EXPOSED TO BENZENE?

Breathing: The most common way people are exposed to benzene is when they fill their car with gasoline. People are also exposed to benzene when they use household products that contain benzene.

Benzene evaporates quickly from contaminated water. People can be exposed to benzene if they use contaminated water to bathe, shower, wash dishes or do laundry.

Benzene vapors are present in exhaust from many industries and automobiles. People who live near highways or industries can be exposed to benzene.

Drinking/Eating: People whose drinking water wells are located within half a mile of leaking underground storage tank, may be exposed by drinking contaminated water.

Touching: Benzene can pass through the skin. Benzene exposure through skin contact with gasoline or other solvents is possible. People can also absorb benzene as they bathe or shower in contaminated water.

DO STANDARDS EXIST FOR REGULATING BENZENE?

Water: The state and federal drinking water standards for benzene are both set at 5 parts per billion (ppb). We suggest you stop drinking water that contains more than 5 ppb of benzene. If the level of benzene in your water is higher than 100 ppb, you may also need to avoid washing, bathing or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of benzene allowed in the air of homes. We recommend that people with any detectable levels of benzene in the air of their homes eliminate the source of the contamination (gasoline in cans, contaminated drinking water, etc.) Most people can smell benzene at levels above 5 parts per million (ppm) in air.

WILL EXPOSURE TO BENZENE RESULT IN HARMFUL HEALTH EFFECTS?

Drowsiness, headaches, and dizziness have been reported when people breathed air with benzene levels of more than 10 ppm for a short time.

The following health effects can occur after several years of exposure to benzene:

Cancer: Long-term exposure to benzene can increase the risk of developing leukemia.

Reproductive Effects: Animal studies show that inhaling benzene vapors can damage reproductive organs and cause infertility. Exposure to benzene in workplaces has caused menstrual variations.

Organ Systems: Exposure to benzene can cause anemia and weaken the immune system.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO BENZENE?

Benzene breaks down in the body to several other compounds. Those compounds can be found in the blood or urine of people who have been exposed to high levels of benzene within the past two days. Tests will prove an exposure to benzene occurred but will not predict the kind of illness that could result. We do not know what level of benzene break-down products are common in most people, since most people are regularly exposed to some amount of benzene.

People who think they have been exposed to benzene over a long period of time should contact their doctor. Physicians can use blood chemistry, liver function and kidney function tests.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: www.dhfs.state.wi.us/eh/index.htm

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(POH 4341 *Revised* 12/2000)

ETHYLBENZENE

ETB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
EB Phenylethane	Liquid	Colorless	Sweet, gasoline-like odor
	Floats on water. Flammable, irritating vapor is produced.		

Keep people away. Avoid contact with liquid and vapor.
Avoid inhalation.
Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).
Shut off ignition sources and call fire department.
Stay upwind and use water spray to ``knock down" vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled, will cause dizziness or difficult breathing. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Will burn skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: $C_6H_5CH_2CH_3$
2.3 IMO/UN Designation: 3.3/1175
2.4 DOT ID No.: 1175
2.5 CAS Registry No.: 100-41-4
2.6 NAERG Guide No.: 129
2.7 Standard Industrial Trade Classification: 51126

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Self-contained breathing apparatus; safety goggles.
3.2 Symptoms Following Exposure: Inhalation may cause irritation of nose, dizziness, depression. Moderate irritation of eye with corneal injury possible. Irritates skin and may cause blisters.
3.3 Treatment of Exposure: INHALATION: if ill effects occur, remove victim to fresh air, keep him warm and quiet, and get medical help promptly; if breathing stops, give artificial respiration. INGESTION: induce vomiting only upon physician's approval; material in lung may cause chemical pneumonitis. SKIN AND EYES: promptly flush with plenty of water (15 min. for eyes) and get medical attention; remove and wash contaminated clothing before reuse.
3.4 TLV-TWA: 100 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: 125 ppm
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5 to 5 g/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. The effect is temporary.
3.11 Liquid or Solid Characteristics: Causes smarting of the skin and first-degree burns on short exposure; may cause secondary burns on long exposure.
3.12 Odor Threshold: 140 ppm
3.13 IDLH Value: 800 ppm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 80ÁF O.C. 59ÁF C.C.
4.2 Flammable Limits in Air: 1.0%-6.7%
4.3 Fire Extinguishing Agents: Foam (most effective), water fog, carbon dioxide or dry chemical.
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Irritating vapors are generated when heated.
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to the source of ignition and flash back.
4.7 Auto Ignition Temperature: 860ÁF
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: 5.8 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 50.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): N_2 diluent: 9.0%

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 29 ppm/96 hr/bluegill/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 2.8% (theor.), 5 days
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: I
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Research grade: 99.98%; pure grade: 99.5%; technical grade: 99.0%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: B
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 106.17
9.3 Boiling Point at 1 atm: 277.2ÁF = 136.2ÁC = 409.4ÁK
9.4 Freezing Point: ï 139ÁF = ï 95ÁC = 178ÁK
9.5 Critical Temperature: 651.0ÁF = 343.9ÁC = 617.1ÁK
9.6 Critical Pressure: 523 psia = 35.6 atm = 3.61 MN/m^2
9.7 Specific Gravity: 0.867 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 29.2 dynes/cm = 0.0292 N/m at 20ÁC
9.9 Liquid Water Interfacial Tension: 35.48 dynes/cm = 0.03548 N/m at 20ÁC
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.071
9.12 Latent Heat of Vaporization: 144 Btu/lb = 80.1 cal/g = 3.35 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,780 Btu/lb = ï 9877 cal/g = ï 413.5 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.4 psia

NOTES

ETHYLBENZENE

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9.20 SATURATED LIQUID DENSITY	
Temperature (degrees F)	Pounds per cubic foot
40	54.990
50	54.680
60	54.370
70	54.060
80	53.750
90	53.430
100	53.120
110	52.810
120	52.500
130	52.190
140	51.870
150	51.560
160	51.250
170	50.940
180	50.620
190	50.310
200	50.000
210	49.690

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
40	0.402
50	0.404
60	0.407
70	0.409
80	0.412
90	0.414
100	0.417
110	0.419
120	0.421
130	0.424
140	0.426
150	0.429
160	0.431
170	0.434
180	0.436
190	0.439
200	0.441
210	0.443

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
-90	1.065
-80	1.056
-70	1.047
-60	1.037
-50	1.028
-40	1.018
-30	1.009
-20	1.000
-10	0.990
0	0.981
10	0.971
20	0.962
30	0.953
40	0.943
50	0.934
60	0.924
70	0.915
80	0.906
90	0.896
100	0.887
110	0.877
120	0.868
130	0.859
140	0.849
150	0.840
160	0.830

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
40	0.835
50	0.774
60	0.719
70	0.670
80	0.626
90	0.586
100	0.550
110	0.518
120	0.488
130	0.461
140	0.436
150	0.414
160	0.393
170	0.374
180	0.356
190	0.340
200	0.325
210	0.311

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
68	0.020

9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
80	0.202
100	0.370
120	0.644
140	1.071
160	1.713
180	2.643
200	3.953
220	5.747
240	8.147
260	11.290
280	15.320
300	20.410
320	26.730
340	34.460
360	43.800
380	54.950

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
80	0.00370
100	0.00654
120	0.01099
140	0.01767
160	0.02734
180	0.04087
200	0.05926
220	0.08363
240	0.11520
260	0.15510
280	0.20490
300	0.26570
320	0.33910
340	0.42620
360	0.52850
380	0.64720

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
-400	-0.007
-350	0.026
-300	0.060
-250	0.093
-200	0.125
-150	0.157
-100	0.187
-50	0.217
0	0.246
50	0.274
100	0.301
150	0.327
200	0.353
250	0.377
300	0.401
350	0.424
400	0.446
450	0.467
500	0.487
550	0.507
600	0.525

TOLUENE

TOL

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Methylbenzene Methylbenzol Toluol	Watery liquid	Colorless	Pleasant odor
	Floats on water. Flammable, irritating vapor is produced.		

Keep people away.
Shut off ignition sources and call fire department.
Stay upwind and use water spray to ``knock down'' vapor.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled, will cause nausea, vomiting, headache, dizziness, difficult breathing, or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing difficult, give oxygen. LIQUID Irritating to skin and eyes. If swallowed, will cause nausea, vomiting or loss of consciousness. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: $C_6H_5CH_3$
2.3 IMO/UN Designation: 3.2/1294
2.4 DOT ID No.: 1294
2.5 CAS Registry No.: 108-88-3
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51123

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Air-supplied mask; goggles or face shield; plastic gloves.
3.2 Symptoms Following Exposure: Vapors irritate eyes and upper respiratory tract; cause dizziness, headache, anesthesia, respiratory arrest. Liquid irritates eyes and causes drying of skin. If aspirated, causes coughing, gagging, distress, and rapidly developing pulmonary edema. If ingested causes vomiting, griping, diarrhea, depressed respiration.
3.3 Treatment of Exposure: INHALATION: remove to fresh air, give artificial respiration and oxygen if needed; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
3.4 TLV-TWA: 50 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5 to 5 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Kidney and liver damage may follow ingestion.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 0.17 ppm
3.13 IDLH Value: 500 ppm
3.14 OSHA PEL-TWA: 200 ppm
3.15 OSHA PEL-STEL: 500 ppm, 10 minute peak once in 8 hour shift
3.16 OSHA PEL-Ceiling: 300 ppm
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 55ÁF O.C. 40ÁF C.C.
4.2 Flammable Limits in Air: 1.27%-7%
4.3 Fire Extinguishing Agents: Carbon dioxide or dry chemical for small fires, ordinary foam for large fires.
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 896ÁF
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 5.7 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 42.8 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 11.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): N_2 diluent: 9.5%

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 1180 mg/l/96 hr/sunfish/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 0%, 5 days; 38% (theor), 8 days
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Research, reagent, nitration-all 99.8 + %; industrial: contains 94 + %, with 5% xylene and small amounts of benzene and nonaromatic hydrocarbons; 90/120: less pure than industrial.
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: U220
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 92.14
9.3 Boiling Point at 1 atm: 231.1ÁF = 110.6ÁC = 383.8ÁK
9.4 Freezing Point: ï 139ÁF = ï 95.0ÁC = 178.2ÁK
9.5 Critical Temperature: 605.5ÁF = 318.6ÁC = 591.8ÁK
9.6 Critical Pressure: 596.1 psia = 40.55 atm = 4.108 MN/m^2
9.7 Specific Gravity: 0.867 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 29.0 dynes/cm = 0.0290 N/m at 20ÁC
9.9 Liquid Water Interfacial Tension: 36.1 dynes/cm = 0.0361 N/m at 25ÁC
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.089
9.12 Latent Heat of Vaporization: 155 Btu/lb = 86.1 cal/g = 3.61 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,430 Btu/lb = ï 9686 cal/g = ï 405.5 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 17.17 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 1.1 psia

NOTES

TOLUENE

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
-30	57.180	0	0.396	0	1.026	0	1.024
-20	56.870	5	0.397	10	1.015	5	0.978
-10	56.550	10	0.399	20	1.005	10	0.935
0	56.240	15	0.400	30	0.994	15	0.894
10	55.930	20	0.402	40	0.983	20	0.857
20	55.620	25	0.403	50	0.972	25	0.821
30	55.310	30	0.404	60	0.962	30	0.788
40	54.990	35	0.406	70	0.951	35	0.757
50	54.680	40	0.407	80	0.940	40	0.727
60	54.370	45	0.409	90	0.929	45	0.700
70	54.060	50	0.410	100	0.919	50	0.673
80	53.750	55	0.411	110	0.908	55	0.649
90	53.430	60	0.413	120	0.897	60	0.625
100	53.120	65	0.414	130	0.886	65	0.603
110	52.810	70	0.415	140	0.876	70	0.582
120	52.500	75	0.417	150	0.865	75	0.562
		80	0.418	160	0.854	80	0.544
		85	0.420	170	0.843	85	0.526
		90	0.421	180	0.833	90	0.509
		95	0.422	190	0.822	95	0.493
		100	0.424	200	0.811	100	0.477
		105	0.425	210	0.800		
		110	0.427				
		115	0.428				
		120	0.429				
		125	0.431				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
68	0.050	0	0.038	0	0.00070	0	0.228
		10	0.057	10	0.00103	25	0.241
		20	0.084	20	0.00150	50	0.255
		30	0.121	30	0.00212	75	0.268
		40	0.172	40	0.00296	100	0.281
		50	0.241	50	0.00405	125	0.294
		60	0.331	60	0.00547	150	0.306
		70	0.449	70	0.00727	175	0.319
		80	0.600	80	0.00954	200	0.331
		90	0.792	90	0.01237	225	0.343
		100	1.033	100	0.01584	250	0.355
		110	1.332	110	0.02007	275	0.367
		120	1.700	120	0.02518	300	0.378
		130	2.148	130	0.03127	325	0.389
		140	2.690	140	0.03850	350	0.400
		150	3.338	150	0.04700	375	0.411
		160	4.109	160	0.05691	400	0.422
		170	5.018	170	0.06840	425	0.432
		180	6.083	180	0.08162	450	0.443
		190	7.323	190	0.09675	475	0.453
		200	8.758	200	0.11400	500	0.462
		210	10.410	210	0.13340	525	0.472
						550	0.482
						575	0.491
						600	0.500

TOLUENE

Also known as: Toluol, Methylbenzene, Phenylmethane
Chemical reference number (CAS): 108-88-3

WHAT IS TOLUENE?

Toluene is a common ingredient in degreasers. It's a colorless liquid with a sweet smell and taste. It evaporates quickly. Toluene is found naturally in crude oil. It's used in oil refining and the manufacturing of paints, lacquers, explosives (TNT) and glues. In homes, toluene may be found in paint thinners, paint brush cleaners, nail polish, glues, inks and stain removers. Toluene is also found in car exhaust and the smoke from cigarettes.

When toluene is spilled on the ground or improperly disposed, it can seep into soil and contaminate nearby wells and streams. Toluene can remain unchanged for a long time in soil or water that is not in contact with air.

HOW ARE PEOPLE EXPOSED TO TOLUENE?

Breathing: People are often exposed to high levels of toluene when they breathe vapors from paints, paint thinners, or glues. Breathing gasoline or car exhaust will also result in some exposure to toluene. People who live near industries using toluene may be exposed to the chemical in the air. If home water supplies are contaminated, people may inhale the chemical while washing, bathing or using water for other household purposes.

Some people intentionally inhale toluene to get "high." These people can be exposed to hazardous levels of the chemical.

Drinking/Eating: People may be exposed by drinking contaminated water, handling contaminated soils or touching their mouths or eating with dirty hands.

Touching: Although the chemical may irritate the skin, it passes through the skin slowly. People can be exposed to toluene when they touch the chemical, touch contaminated soil, or bathe in contaminated water.

DO STANDARDS EXIST FOR REGULATING TOLUENE?

Water: The Wisconsin drinking water standard is 343 parts per billion (ppb) of toluene. We suggest you stop drinking water that contains higher levels. If levels of toluene are very high in your water, you should avoid washing, bathing, or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of toluene allowed in the air of homes. We use a formula to convert work place limits to suggested home limits. Based on the formula, we recommend levels be no higher than 4 parts per million (ppm) of toluene in air. Most people can't smell toluene until levels reach 0.16 - 37 ppm. If you can smell the chemical, the level may be too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of toluene that can be released by industries.

WILL EXPOSURE TO TOLUENE RESULT IN HARMFUL HEALTH EFFECTS?

The following symptoms may occur immediately or shortly after exposure to levels over 100 ppm of toluene in air;

- Tiredness, dizziness, headache, loss of coordination or hearing, euphoria, insomnia
- Nausea
- Eye and nose irritation
- Rapid delay of reaction time, unconsciousness, and death at levels of 4,000 ppm

The worst effects of exposure to toluene have occurred in deliberate abusers of toluene. Most studies of workers exposed to moderate levels of toluene show no harmful health effects.

The following health effects can occur after several years of exposure to toluene:

Cancer: Research shows that toluene is unlikely to cause cancer.

Reproductive Effects: There are no indications toluene causes damage to reproductive organs. Toluene may affect the development of unborn babies.

Organ Systems: Damage to the brain, liver, bone marrow and kidneys can occur.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO TOLUENE?

The breakdown products of toluene, hipparic acid and cresol, can be measured in urine within 12 hours of a high level exposure. These measurements may not predict possible future health effects. Other medical tests may be helpful in determining damage to the nervous system, kidneys or liver.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: www.dhfs.state.wi.us/eh/index.htm

Prepared by the
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(POH 4351 *Revised* 12/2000)

M-XYLENE

XLM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
1,3-Dimethylbenzene
Xylol

Watery liquid Colorless Sweet odor

Floats on water. Flammable, irritating vapor is produced.

Keep people away.
Shut off ignition sources and call fire department.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

FLAMMABLE
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear self-contained breathing apparatus.
Extinguish with foam, dry chemical, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose, and throat.
If inhaled, will cause headache, difficult breathing, or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
If swallowed, will cause nausea, vomiting, or loss of consciousness.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: m-$C_6H_4(CH_3)_2$
2.3 IMO/UN Designation: 3.2/1307
2.4 DOT ID No.: 1307
2.5 CAS Registry No.: 108-38-3
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51124

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Approved canister or air-supplied mask; goggles or face shield; plastic gloves and boots.
3.2 Symptoms Following Exposure: Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma; can be fatal. Kidney and liver damage can occur.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; administer artificial respiration and oxygen if required; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
3.4 TLV-TWA: 100 ppm
3.5 TLV-STEL: 150 ppm
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Kidney and liver damage.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 0.05 ppm
3.13 IDLH Value: 900 ppm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 81ÁF C.C.
4.2 Flammable Limits in Air: 1.1%-7.0%
4.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 982ÁF
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 5.8 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 50.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 22 ppm/96 hr/bluegill/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 0 lb/lb, 5 days; 0% (theor.), 8 days
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Research: 99.99%; Pure: 99.9%; Technical: 99.2%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: III
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: U239
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 106.16
9.3 Boiling Point at 1 atm: 282ÁF = 138.9ÁC = 412.1ÁK
9.4 Freezing Point: ï 54.2ÁF = ï 47.9ÁC = 225.3ÁK
9.5 Critical Temperature: 650.8ÁF = 343.8ÁC = 617ÁK
9.6 Critical Pressure: 513.8 atm = 34.95 psia = 3.540 MN/m^2
9.7 Specific Gravity: 0.864 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 28.6 dynes/cm = 0.0286 N/m at 20ÁC
9.9 Liquid Water Interfacial Tension: 36.4 dynes/cm = 0.0364 N/m at 30ÁC
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.071
9.12 Latent Heat of Vaporization: 147 Btu/lb = 81.9 cal/g = 3.43 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,554 Btu/lb = ï 9752.4 cal/g = ï 408.31 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 26.01 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.34 psia

NOTES

M-XYLENE

XLM

9.20 SATURATED LIQUID DENSITY	
Temperature (degrees F)	Pounds per cubic foot
15	55.400
20	55.260
25	55.130
30	54.990
35	54.850
40	54.710
45	54.570
50	54.430
55	54.290
60	54.160
65	54.020
70	53.880
75	53.740
80	53.600
85	53.460
90	53.320
95	53.180
100	53.050

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
40	0.387
50	0.393
60	0.398
70	0.404
80	0.410
90	0.415
100	0.421
110	0.426
120	0.432
130	0.437
140	0.443
150	0.448
160	0.454
170	0.460
180	0.465
190	0.471
200	0.476
210	0.482

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
35	0.962
40	0.953
45	0.944
50	0.935
55	0.926
60	0.917
65	0.908
70	0.899
75	0.890
80	0.881
85	0.873
90	0.864
95	0.855
100	0.846

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
15	0.938
20	0.898
25	0.862
30	0.827
35	0.794
40	0.764
45	0.735
50	0.708
55	0.682
60	0.658
65	0.635
70	0.613
75	0.592
80	0.572
85	0.554

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
	I
	N
	S
	O
	L
	U
	B
	L
	E

9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
60	0.090
70	0.127
80	0.177
90	0.242
100	0.326
110	0.434
120	0.571
130	0.743
140	0.956
150	1.219
160	1.538
170	1.924
180	2.388
190	2.939
200	3.590
210	4.355
220	5.247
230	6.282
240	7.476
250	8.846
260	10.410

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
60	0.00172
70	0.00238
80	0.00324
90	0.00435
100	0.00577
110	0.00754
120	0.00975
130	0.01247
140	0.01577
150	0.01977
160	0.02455
170	0.03023
180	0.03691
190	0.04473
200	0.05382
210	0.06431
220	0.07635
230	0.09009
240	0.10570
250	0.12330
260	0.14310

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
0	0.247
25	0.260
50	0.273
75	0.286
100	0.299
125	0.311
150	0.324
175	0.336
200	0.348
225	0.360
250	0.371
275	0.383
300	0.394
325	0.406
350	0.417
375	0.427
400	0.438
425	0.449
450	0.459
475	0.469
500	0.479
525	0.489
550	0.499
575	0.508
600	0.517

O-XYLENE

XLO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
1,2-Dimethylbenzene
Xylol

Watery liquid Colorless Sweet odor

Floats on water. Flammable, irritating vapor is produced.

Keep people away.
Shut off ignition sources and call fire department.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

FLAMMABLE
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear self-contained breathing apparatus.
Extinguish with foam, dry chemical, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause headache, difficult breathing, or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
If swallowed, will cause nausea, vomiting, or loss of consciousness.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Dangerous to aquatic life in high concentrations.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: o-$C_6H_4(CH_3)_2$
2.3 IMO/UN Designation: 3.2/1307
2.4 DOT ID No.: 1307
2.5 CAS Registry No.: 95-47-6
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51124

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Approved canister or air-supplied mask; goggles or face shield; plastic gloves and boots.
3.2 Symptoms Following Exposure: Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma. Can be fatal. Kidney and liver damage can occur.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; administer artificial respiration and oxygen if required; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
3.4 TLV-TWA: 100 ppm
3.5 TLV-STEL: 150 ppm
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Kidney and liver damage.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 0.05 ppm
3.13 IDLH Value: 900 ppm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 90ÁF C.C.
4.2 Flammable Limits in Air: 0.9 - 6.7%
4.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 869ÁF
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 5.8 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 50.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: >100 mg/l/96 hr/D. magna/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 0 lb/lb. 5 days; 2.5% (theor.), 8 days
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: I
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Research: 99.99%; Pure: 99.7%; Commercial: 95+%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No reaction
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: U239
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 106.16
9.3 Boiling Point at 1 atm: 291.9ÁF = 144.4ÁC = 417.6ÁK
9.4 Freezing Point: ï 13.3ÁF = ï 25.2ÁC = 248.0ÁK
9.5 Critical Temperature: 674.8ÁF = 357.1ÁC = 630.3ÁK
9.6 Critical Pressure: 541.5 atm = 36.84 psia = 3.732 MN/m^2
9.7 Specific Gravity: 0.880 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 30.53 dynes/cm = 0.03053 N/m at 15.5ÁC
9.9 Liquid Water Interfacial Tension: 36.06 dynes/cm = 0.03606 N/m at 20ÁC
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.068
9.12 Latent Heat of Vaporization: 149 Btu/lb = 82.9 cal/g = 3.47 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,558 Btu/lb = ï 9754.7 cal/g = ï 408.41 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 30.64 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.28 psia

NOTES

O-XYLENE

XLO

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
15	56.460	35	0.389	35	1.043	15	1.328
20	56.330	40	0.391	40	1.035	20	1.263
25	56.190	45	0.394	45	1.027	25	1.202
30	56.050	50	0.396	50	1.018	30	1.145
35	55.910	55	0.398	55	1.010	35	1.092
40	55.770	60	0.400	60	1.002	40	1.042
45	55.630	65	0.402	65	0.993	45	0.995
50	55.490	70	0.404	70	0.985	50	0.952
55	55.360	75	0.406	75	0.977	55	0.911
60	55.220	80	0.408	80	0.969	60	0.873
65	55.080	85	0.411	85	0.960	65	0.836
70	54.940	90	0.413	90	0.952	70	0.802
75	54.800	95	0.415	95	0.944	75	0.770
80	54.660	100	0.417	100	0.935	80	0.740
85	54.520					85	0.712
90	54.380						
95	54.250						
100	54.110						

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	60	0.071	60	0.00135	0	0.261
	N	70	0.101	70	0.00188	25	0.274
	S	80	0.141	80	0.00258	50	0.287
	O	90	0.194	90	0.00349	75	0.299
	L	100	0.263	100	0.00464	100	0.311
	U	110	0.352	110	0.00611	125	0.323
	B	120	0.465	120	0.00794	150	0.335
	L	130	0.609	130	0.01021	175	0.347
	E	140	0.787	140	0.01298	200	0.358
		150	1.007	150	0.01634	225	0.370
		160	1.277	160	0.02038	250	0.381
		170	1.605	170	0.02520	275	0.392
		180	1.999	180	0.03090	300	0.403
		190	2.469	190	0.03759	325	0.414
		200	3.028	200	0.04539	350	0.424
		210	3.686	210	0.05443	375	0.435
		220	4.456	220	0.06484	400	0.445
		230	5.352	230	0.07674	425	0.455
		240	6.389	240	0.09030	450	0.465
		250	7.581	250	0.10560	475	0.475
		260	8.947	260	0.12290	500	0.485
						525	0.494
						550	0.504
						575	0.513
						600	0.522

P-XYLENE

XLP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
1,4-Dimethylbenzene
Xylol

Watery liquid Colorless Sweet odor

Floats on water. Flammable, irritating vapor is produced. Freezing point is 56ÁF.

Keep people away.
Shut off ignition sources and call fire department.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

FLAMMABLE
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear self-contained breathing apparatus.
Extinguish with foam, dry chemical, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause dizziness, difficult breathing, or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
If swallowed, will cause nausea, vomiting, loss of consciousness.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: p-$C_6H_4(CH_3)_2$
2.3 IMO/UN Designation: 3.2/1307
2.4 DOT ID No.: 1307
2.5 CAS Registry No.: 106-42-3
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51124

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Approved canister or air-supplied mask; goggles or face shield; plastic gloves and boots.
3.2 Symptoms Following Exposure: Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma. Can be fatal. Kidney and liver damage can occur.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; administer artificial respiration and oxygen if required; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
3.4 TLV-TWA: 100 ppm
3.5 TLV-STEL: 150 ppm
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Kidney and liver damage.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 0.05 ppm
3.13 IDLH Value: 900 pmm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 81ÁF C.C.
4.2 Flammable Limits in Air: 1.1%-7.0%
4.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 984ÁF
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 5.8 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 50.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 22 ppm/96 hr/bluegill/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 0 lb/lb in 5 days
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: I
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Research: 99.99%; Pure: 99.8%; Technical: 99.0%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: III
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	3
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 100 pounds
8.7 EPA Pollution Category: B
8.8 RCRA Waste Number: U239
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15ÁC and 1 atm: Liquid
9.2 Molecular Weight: 106.16
9.3 Boiling Point at 1 atm: 280.9ÁF = 138.3ÁC = 411.5ÁK
9.4 Freezing Point: 55.9ÁF = 13.3ÁC = 286.5ÁK
9.5 Critical Temperature: 649.4ÁF = 343.0ÁC = 616.2ÁK
9.6 Critical Pressure: 509.4 atm = 34.65 psia = 3.510 MN/m^2
9.7 Specific Gravity: 0.861 at 20ÁC (liquid)
9.8 Liquid Surface Tension: 28.3 dynes/cm = 0.0283 N/m at 20ÁC
9.9 Liquid Water Interfacial Tension: 37.8 dynes/cm = 0.0378 N/m at 20ÁC
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.071
9.12 Latent Heat of Vaporization: 150 Btu/lb = 81 cal/g = 3.4 X 10^5 J/kg
9.13 Heat of Combustion: ï 17,559 Btu/lb = ï 9754.7 cal/g = ï 408.41 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 37.83 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.34 psia

NOTES

P-XYLENE

XLP

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
60	53.970	60	0.412	60	0.935	60	0.678
65	53.830	70	0.418	65	0.928	65	0.654
70	53.690	80	0.424	70	0.921	70	0.631
75	53.550	90	0.429	75	0.914	75	0.610
80	53.410	100	0.435	80	0.907	80	0.590
85	53.270	110	0.440	85	0.900	85	0.571
90	53.140	120	0.446	90	0.892	90	0.552
95	53.000	130	0.451	95	0.885	95	0.535
100	52.860	140	0.457	100	0.878	100	0.519
105	52.720	150	0.462			105	0.503
110	52.580	160	0.468			110	0.488
115	52.440	170	0.474			115	0.474
120	52.300	180	0.479			120	0.460
		190	0.485				
		200	0.490				
		210	0.496				
		220	0.501				
		230	0.507				
		240	0.512				
		250	0.518				
		260	0.524				
		270	0.529				
		280	0.535				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	60	0.096	60	0.00183	0	0.246
	N	70	0.135	70	0.00252	25	0.259
	S	80	0.187	80	0.00343	50	0.272
	O	90	0.255	90	0.00459	75	0.285
	L	100	0.343	100	0.00607	100	0.297
	U	110	0.456	110	0.00792	125	0.309
	B	120	0.599	120	0.01022	150	0.321
	L	130	0.777	130	0.01303	175	0.333
	E	140	0.998	140	0.01646	200	0.345
		150	1.270	150	0.02059	225	0.357
		160	1.600	160	0.02553	250	0.368
		170	1.998	170	0.03138	275	0.380
		180	2.475	180	0.03826	300	0.391
		190	3.041	190	0.04629	325	0.402
		200	3.710	200	0.05561	350	0.413
		210	4.493	210	0.06636	375	0.424
		220	5.407	220	0.07867	400	0.435
		230	6.465	230	0.09270	425	0.445
		240	7.683	240	0.10860	450	0.456
		250	9.080	250	0.12650	475	0.466
		260	10.670	260	0.14670	500	0.476
						525	0.486
						550	0.496
						575	0.505
						600	0.515

TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Combustible material; avoid heat and sources of ignition. **Harmful compound, minimize exposure.** **Irritating to skin, eyes, and the respiratory system.** **Dangerous for the environment.**	

Section I. Chemical Product and Company Identification

Chemical Name **1,3,5-Trimethylbenzene**

Catalog Number	T0470
Synonym	Mesitylene
Chemical Formula	$(CH_3)_3C_6H_3$
CAS Number	108-67-8

Supplier: TCI America, 9211 N. Harborgate St., Portland OR, 1-800-423-8616

In case of Emergency Call: **Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)**

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
1,3,5-Trimethylbenzene	108-67-8	Min. 97.0 (GC)	Not available.	Rat LC_{50} (inhalation) 24gm/m^3/4H

Section III. Hazards Identification

Acute Health Effects

Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Section IV. First Aid Measures

Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact

In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Inhalation

If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.

Ingestion

INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. SEEK IMMEDIATE MEDICAL ATTENTION in case of ingestion of a radioactive material.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	44.44°C (112°F).	Flammable Limits	LOWER: 0.88%

Combustion Products

These products are toxic carbon oxides (CO, CO_2).

Fire Hazards

Not available.

Explosion Hazards

Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions

Combustible liquid.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.

Continued on Next Page **Emergency phone number (800) 424-9300**

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Combustible material. Harmful material. Irritating material. Dangerous for the environment. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	COMBUSTIBLE. HARMFUL. IRRITANT. DANGEROUS FOR THE ENVIRONMENT. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray. Always store away from incompatible compounds such as oxidizing agents.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Practically insoluble in water. Miscible with alcohol, ether, benzene.
Specific Gravity	0.864 (water=1)		
Molecular Weight	120.19	Partition Coefficient	Not available.
Boiling Point	163 to 166°C (325.4 to 330.8°F)	Vapor Pressure	0.3 kPa (@ 25°C)
Melting Point	-45°C (-49°F)	Vapor Density	4.1 (Air = 1)
Refractive Index	1.49541 @ 18°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Peculiar
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, nitric acid.

Section XI. Toxicological Information

RTECS Number	OX6825000
Routes of Exposure	Eye Contact. Ingestion. inhalation.
Toxicity Data	Rat LC_{50} (inhalation) 24gm/m^3/4H
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Not available. **DEVELOPMENTAL TOXICITY**: Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Continued on Next Page

Section XII. Ecological Information

Ecotoxicity	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Environmental Fate	Mesitylene's production and use as a dyestuff intermediate, solvent, paint thinner, and as a UV oxidation stabilizer for plastics may result in its release to the environment through various waste streams. Mesitylene is released directly to the environment as a component of gasoline and as an emission from gasoline-powered vehicles, municipal waste-treatment plants, and coal-fired power stations. If released to the atmosphere, mesitylene will exist solely in the vapor phase in the ambient atmosphere, based on a measured vapor pressure of 2.48 mm Hg at 25 deg C. Vapor-phase mesitylene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and nitrate radicals with half-lives of about 7 hours and 10-67 days, respectively. A measured Koc value of 660 suggests that mesitylene will have low mobility in soil. Volatilization from moist and dry soil surfaces should occur based on a measured Henry's Law constant of 8.77X10-3 atm-cu m/mole and the vapor pressure of this compound, respectively. Mesitylene should aerobically biodegrade in both soil and water. Mesitylene was not degraded in methanogenic aquifer microcosms. In water, mesitylene may adsorb to sediment or particulate matter based on its Koc value. This compound should volatilize from water surfaces given its Henry's Law constant. Estimated half-lives for a model river and model lake are 3 hours and 4 days, respectively. Bioconcentration in aquatic organisms may occur based on BCF values of 23-342, measured in carp. The general population will be exposed to mesitylene via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with vapors, food and other products containing mesitylene. Occupational exposure may occur through inhalation and dermal contact with this compound at workplaces where it is produced or used.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissove or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and locl regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	CLASS 3: Flammable liquid.
PIN Number	UN2325
Proper Shipping Name	1,3,5-Trimethylbenzene
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). This product is subject to SARA section 313 reporting requirements (8a PAIR).
EINECS Number (EEC)	203-604-4
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R51- Toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

Version 1.0
Validated on 6/7/2002.
Printed 3/11/2005.

Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

Fisher Scientific
Part of Thermo Fisher Scientific

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name:	1,2,4-Trimethylbenzene
Catalog Numbers:	AC140090000, AC140090010, AC140090025, AC140095000
Synonyms:	Pseudocumene.
Company Identification:	Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
Company Identification: (USA)	Acros Organics One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	800-ACROS-01
For information in Europe, call:	+32 14 57 52 11
Emergency Number, Europe:	+32 14 57 52 99
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300
CHEMTREC Phone Number, Europe:	703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#:	95-63-6
Chemical Name:	1,2,4-Trimethylbenzene
%:	98
EINECS#:	202-436-9

Hazard Symbols: XN N

Risk Phrases: 10 20 36/37/38 51/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. Harmful if inhaled. Causes eye, skin, and respiratory tract irritation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Target Organs: Blood, central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Causes redness and pain.

Skin: Causes skin irritation. Causes redness and pain. May be harmful if absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May be harmful if swallowed. May cause central nervous system depression.

Inhalation: Harmful if inhaled. Causes respiratory tract irritation. May cause drowsiness, unconsciousness, and central nervous system depression.

Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause anemia and other blood cell abnormalities. Prolonged exposure may produce a narcotic effect. Prolonged or repeated exposure may cause nausea, dizziness, and headache.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Possible aspiration hazard. Get medical aid immediately. Call a poison control center.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Possible aspiration hazard. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable liquid and vapor.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: 500 deg C (932.00 deg F)

Flash Point: 48 deg C (118.40 deg F)

Explosion Limits: Lower: 0.9 vol %

Explosion Limits: Upper: 6.4 vol %

NFPA Rating: health: 2; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood. Keep away from heat, sparks and flame.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,2,4-Trimethylbenzene	25 ppm TWA (listed under Trimethyl benzene).	25 ppm TWA; 125 mg/m3 TWA	none listed

OSHA Vacated PELs: 1,2,4-Trimethylbenzene: 25 ppm TWA; 125 mg/m3 TWA (listed under Trimethyl benzene)

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Color: colorless
Odor: aromatic odor
pH: Not available
Vapor Pressure: 7 mm Hg @ 44.4 deg C
Vapor Density: 4.15 (air=1)
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: 168 deg C @ 760 mmHg (334.40°F)
Freezing/Melting Point: -44 deg C (-47.20°F)
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 0.880 g/cm3
Molecular Formula: C9H12
Molecular Weight: 120.19

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials Strong oxidizing agents.
Hazardous Decomposition Products Carbon monoxide, carbon dioxide.
Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 95-63-6: DC3325000

LD50/LC50: RTECS:
CAS# 95-63-6: Inhalation, rat: LC50 = 18000 mg/m3/4H;
Oral, mouse: LD50 = 6900 mg/kg;
Oral, rat: LD50 = 5 gm/kg;
.

Carcinogenicity: 1,2,4-Trimethylbenzene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 77.2 mg/L; 96 Hr; Flow-through at 25 C (pH 7.24)

Other: Do not empty into drains.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: FLAMMABLE LIQUIDS, N.O.S. (1,2,4-Trimethylbenzene)
Hazard Class: 3
UN Number: UN1993
Packing Group: III
Canada TDG

Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 10 Flammable.

R 20 Harmful by inhalation.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 95-63-6: 3

Canada

CAS# 95-63-6 is listed on Canada's DSL List

Canadian WHMIS Classifications: B3, D1B, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 95-63-6 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 95-63-6 is listed on the TSCA Inventory.

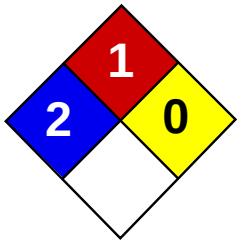
Section 16 - Other Information

MSDS Creation Date: 5/19/1999

Revision #5 Date 8/30/2007

Revisions were made in Sections: 3, 4, 5, 6, 7, 8, 9, 10, 11, 1

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.



Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Carbazole MSDS

Section 1: Chemical Product and Company Identification

Product Name: Carbazole

Catalog Codes: SLC4801

CAS#: 86-74-8

RTECS: FE3150000

TSCA: TSCA 8(b) inventory: Carbazole

CI#: Not available.

Synonym: 9-Azaflluorene; 9H-Carbazole; Dibenzo(b,d)ppyrrole; Dibenzopyrrole; Diphenyleneimine; Diphenylenimide; Diphenylenimine

Chemical Name: Carbazole

Chemical Formula: C12-H9-N

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Carbazole	86-74-8	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
As with most organic solids, fire is possible at elevated temperatures. When heated to decomposition it emits toxic fumes of nitrogen oxides

Special Remarks on Explosion Hazards:
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystals solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 167.21 g/mole

Color: White.

pH (1% soln/water): Not applicable.

Boiling Point: 355°C (671°F)

Melting Point: 245°C (473°F)

Critical Temperature: Not available.

Specific Gravity: Density: 1.1 @ 18 deg. C(Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Partially soluble in acetone. Very slightly soluble in diethyl ether. Insoluble in cold water, hot water. 1 gram is soluble in 3 ml Quinoline, 6 ml Pyridine, 9 ml Acetone, 2 ml Acetone @ 50 deg. C., 35 ml Ether, 120 ml Benzene, 135 ml absolute alcohol. Slightly soluble in Petroleum Ether, chlorinated hydrocarbons, Acetic acid, Carbon Disulfide. Soluble in hot Chloroform, Toluene.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials, dust generation

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): >5000 mg/kg [Rat].

Chronic Effects on Humans: CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC.

Other Toxic Effects on Humans:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose: LDL [Rat] - Route: Oral; Dose: 500 mg/kg Lethal Dose/Conc 50% Kill: LD50 [Mouse] - Intraperitoneal; Dose: 200 mg/kg Lethal Dose/Conc: LD [Mouse] - Route: Oral; Dose: >400 mg/kg

Special Remarks on Chronic Effects on Humans:
May affect genetic material (mutagenic). May cause cancer based on animal test data.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting and diarrhea. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect the liver and cause weight loss.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Carbazole California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Carbazole California Director's List of Hazardous Substances: Carbazole TSCA 8(b) inventory: Carbazole TSCA 8(d) H and S data reporting: Carbazole: Effective date: 3/07/86; Sunset date: 3/07/96

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
R40- Limited evidence of carcinogenic effect S24/25- Avoid contact with skin and eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 04:34 PM

Last Updated: 05/21/2013 12:00 PM

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SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

BCR-337: dibenzofuran

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product name	: BCR-337: dibenzofuran
Product type REACH	: Substance/mono-constituent
CAS number	: 132-64-9
EC number	: 205-071-3
RTECS number	: HP4430000
Molecular mass	: 168.19 g/mol
Formula	: C12H80

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Certified reference material for laboratory use only

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel: +32 14 57 12 11
Fax: +32 14 59 04 06
JRC-IRMM-RM-Sales@ec.europa.eu

1.4 Emergency telephone number:

Poison Centre:

+32 70 245 245

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Aquatic Chronic	category 2	H411: Toxic to aquatic life with long lasting effects.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

N; R51-53 - Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

2.2 Label elements:

Labelling according to Regulation EC No 1272/2008 (CLP)

Signal word	No signal word
H-statements	
H411	Toxic to aquatic life with long lasting effects.
P-statements	
P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/container to manufacturer/competent authority.

2.3 Other hazards:

CLP

Combustible

© BIG vzw

Its dust is explosive with air
Dust cloud can be ignited by a spark
Not readily biodegradable in water

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name (REACH Registration No)	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
dibenzofuran	132-64-9 205-071-3		N; R51-53	Aquatic Chronic 2; H411	(1)	Mono-constituent

(1) For R-phrases and H-statements in full: see heading 16

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

If you feel unwell, seek medical advice.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse with water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed:

4.2.1 Acute symptoms

After inhalation:

No data available.

After skin contact:

No data available.

After eye contact:

No data available.

After ingestion:

No data available.

4.2.2 Delayed symptoms

If applicable and available it will be listed below.

4.3 Indication of any immediate medical attention and special treatment needed:

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Water spray. Polyvalent foam. ABC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO2 are formed.

5.3 Advice for firefighters:

5.3.1 Instructions:

Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain leaking substance. Dam up the solid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Avoid raising dust. Keep away from naked flames/heat. Avoid prolonged and repeated contact with skin. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Store in a cool area. Store in a dry area. Store in a dark area. Keep container in a well-ventilated place. Fireproof storeroom. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
No data available		

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Avoid prolonged and repeated contact with skin. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Dust formation: dust mask.

b) Hand protection:

Gloves.

- materials for protective clothing (good resistance)

PVC.

c) Eye protection:

Safety glasses. In case of dust production: protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Crystalline solid
	Crystalline powder
	Needles
Odour	Characteristic odour
Odour threshold	0.12 - 0.25 ppm
	0.775 - 1.615 mg/m³
Colour	White
Particle size	No data available
Explosion limits	No data available
Flammability	Combustible
Log Kow	4.12 - 5.16
Dynamic viscosity	0.099 Pa.s ; 0 °C
Kinematic viscosity	No data available
Melting point	86 °C
Boiling point	287 °C
Flash point	130 °C
Evaporation rate	No data available
Vapour pressure	0.0032 hPa ; 25 °C
Relative vapour density	5.8
Solubility	water ; 0.00031 g/100 ml
	ethanol ; soluble
	ether ; soluble
	acetone ; soluble
	acetic acid ; soluble
	chloroform ; soluble
Relative density	1.1
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

Physical hazards

No physical hazard class

9.2 Other information:

Critical temperature	551 °C
Critical pressure	364 hPa
Absolute density	1089 kg/m³

SECTION 10: Stability and reactivity

10.1 Reactivity:

Temperature above flashpoint: higher fire/explosion hazard.

10.2 Chemical stability:

No data available.

10.3 Possibility of hazardous reactions:

No data available.

10.4 Conditions to avoid:

Avoid raising dust. Keep away from naked flames/heat.

10.5 Incompatible materials:

Oxidizing agents.

10.6 Hazardous decomposition products:

Upon combustion: CO and CO2 are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

BCR-337: dibenzofuran

No (test)data available

Corrosion/irritation

BCR-337: dibenzofuran

No (test)data available

Respiratory or skin sensitisation

BCR-337: dibenzofuran

No (test)data available

Specific target organ toxicity

BCR-337: dibenzofuran

No (test)data available

Mutagenicity (in vitro)

BCR-337: dibenzofuran

Result	Method	Test substrate	Effect	Value determination
Negative	Ames test			

Mutagenicity (in vivo)

BCR-337: dibenzofuran

No (test)data available

Carcinogenicity

BCR-337: dibenzofuran

No (test)data available

Reproductive toxicity

BCR-337: dibenzofuran

No (test)data available

Toxicity other effects

BCR-337: dibenzofuran

No (test)data available

Chronic effects from short and long-term exposure

BCR-337: dibenzofuran

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. May stain the skin.

11.1.2 Other information

BCR-337: dibenzofuran

No (test)data available

SECTION 12: Ecological information

12.1 Toxicity:

BCR-337: dibenzofuran

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		1.78 - 1.85 mg/l	96 h	Pimephales promelas			
Acute toxicity invertebrates	LC50		1.7 mg/l	48 h	Daphnia magna			

Conclusion

Toxic to fishes

Toxic to invertebrates (Daphnia)

12.2 Persistence and degradability:

BCR-337: dibenzofuran

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	0 %	28 day(s)	Experimental value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	> 48 day(s)		

May cause long-term adverse effects in the aquatic environment

Conclusion

Not readily biodegradable in water

12.3 Bioaccumulative potential:

BCR-337: dibenzofuran

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		2420		Cyprinus carpio	
		524 - 2420		Poecilia reticulata	

Log Kow

Method	Remark	Value	Temperature	Value determination
		4.12 - 5.16		

Conclusion

Potential for bioaccumulation (500 ≥ BCF ≤ 5000)

12.4 Mobility in soil:

No (test)data on mobility of the substance available

12.5 Results of PBT and vPvB assessment:

Due to insufficient data no statement can be made whether the substance fulfils the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other adverse effects:

BCR-337: dibenzofuran

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No. 1272/2008 and 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, decision 2000/0532/EC).
16 05 06* (laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals). Depending on branch of industry and production process, also other EURAL codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	3077

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADR	dibenzofuran

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1 UN number:

UN number	3077

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name RID	dibenzofuran

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1 UN number:

UN number	3077

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.

Techn./chem. name ADN	dibenzofuran

14.3 Transport hazard class(es):

Class	9
Classification code	M7

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG)

14.1 UN number:

UN number	3077

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name IMO	dibenzofuran

14.3 Transport hazard class(es):

Class	9

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg. (gross mass)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	3077

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ICAO	dibenzofuran

14.3 Transport hazard class(es):

Class	9

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	A97
Special provisions	A158
Special provisions	A179
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	30 kg G

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

European legislation:

Volatile organic compounds (VOC)

0 %

15.2 Chemical safety assessment:

No chemical safety assessment has been conducted.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Not listed in Annex I of directive 67/548/EEC et sequens. Labelling established on the basis of the available data.

Labels

Dangerous for the environment

R-phrases

51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrases

(29) (Do not empty into drains)

61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Full text of any R-phrases referred to under headings 2 and 3:

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51 Toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment

Full text of any H-statements referred to under headings 2 and 3:

H411 Toxic to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Also known as: Polynuclear Aromatic Hydrocarbons, PNA, Polyaromatic Hydrocarbons
Examples: Benzo(a)pyrene, Benzanthracene, Benzo(b)fluoranthene, Fluoranthene, Naphthalene

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WHAT ARE PAHs?

PAHs are a group of approximately 10,000 compounds, a few of which are listed above. Most PAHs in the environment are from incomplete burning of carbon-containing materials like oil, wood, garbage or coal. Many useful products such as mothballs, blacktop, and creosote wood preservatives contain PAHs. They are also found at low concentrations in some special-purpose skin creams and anti-dandruff shampoos that contain coal tars.

Automobile exhaust, industrial emissions and smoke from burning wood, charcoal and tobacco contain high levels of PAHs. In general, more PAHs form when materials burn at low temperatures, such as in wood fires or cigarettes. High-temperature furnaces produce fewer PAHs.

Fires can form fine PAH particles. They bind to ash particles and can move long distances through the air. Some PAHs can dissolve in water. PAHs can enter groundwater from ash, tar, or creosote that is improperly disposed in landfills.

HOW ARE PEOPLE EXPOSED TO PAHs?

Breathing: Most people are exposed to PAHs when they breathe smoke, auto emissions or industrial exhausts. Most exhausts contain many different PAH compounds. People with the highest exposures are smokers, people who live or work with smokers, roofers, road builders and people who live near major highways or industrial sources.

Drinking/Eating: Charcoal-broiled foods, especially meats, are a source of some PAH exposure. Shellfish living in contaminated water may be another major source of exposure. PAHs may be in groundwater near disposal sites where construction wastes or ash are buried; people may be exposed by drinking this water. Vegetables do not take up significant amounts of PAHs that are in soil.

Touching: PAH can be absorbed through skin. Exposure can come from handling contaminated soil or bathing in contaminated water. Low levels of these chemicals may be absorbed when a person uses medicated skin cream or shampoo containing PAHs.

DO STANDARDS EXIST FOR REGULATING PAHs?

Water: Wisconsin has established drinking water standards for five PAHs: Anthracene - 3,000 parts per billion (ppb), Benzo(a)pyrene - 0.2 ppb, Benzo(b)fluoranthene - 0.2 ppb, Fluoranthene - 400 ppb and Fluorene - 400 ppb. We suggest you stop drinking water containing more than these amounts. If other PAHs are found in your drinking water, contact your local public health agency for advice.

Air: No standards exist for the amount of PAHs allowed in the air of homes. We use a formula to convert workplace limits to suggested home limits. Based on the formula, we recommend levels of PAHs in air be no higher than 0.004 parts per million (ppm).

The Wisconsin Department of Natural Resources regulates the amount of several PAHs that can be released by industries.

WILL EXPOSURE TO PAHs RESULT IN HARMFUL HEALTH EFFECTS?

The effects of breathing high concentrations of PAHs have not been studied. However, PAHs may be attached to dust or ash causing lung irritation. Skin contact with PAHs may cause redness, blistering, and peeling.

The following health effects can occur after several years of exposure to PAHs:

Cancer: Benzo(a)pyrene, a common PAH, is shown to cause lung and skin cancer in laboratory animals. Other PAHs are not known to have this effect. Extracts of various types of smoke containing PAHs caused lung tumors in laboratory animals. Cigarette smoke will cause lung cancer.

Reproductive Effects: Reproductive problems and problems in unborn babies' development have occurred in laboratory animals that were exposed to benzo(a)pyrene. Other PAHs have not been studied enough to determine whether they cause reproductive problems.

Organ Systems: A person's lungs, liver, skin, and kidneys can be damaged by exposure.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO PAHs?

Many PAHs can be detected in blood or urine soon after exposure. Tests for these compounds are not routine and can only be performed using special equipment not usually found in doctor's offices. People who think they may have been exposed to PAHs for a long time should contact their physician. Blood tests of liver and kidney function are available. People exposed to PAHs in air may want to ask their doctor to consider having lung function tests done.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: www.dhfs.state.wi.us/eh/index.htm

Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health, with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4606 *Revised* 12/2000)

NAPHTHA: COAL TAR

NCT

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Mixture of benzene, toluene, xylenes	Watery liquid	Colorless to pale yellow	Gasoline-like odor
	Floats on water. Irritating vapor is produced.		

Keep people away.
Avoid inhalation.
Shut off ignition sources and call fire department.
Avoid contact with liquid and vapor.
Stay upwind and use water spray to ``knock down'' vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled, will cause dizziness, headache, difficult breathing or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Irritating to skin and eyes. If swallowed, will cause nausea or vomiting. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 33; Miscellaneous Hydrocarbon Mixtures
2.2 Formula: Currently not available
2.3 IMO/UN Designation: 3.2/2553
2.4 DOT ID No.: 1268
2.5 CAS Registry No.: MX8030-31-7
2.6 NAERG Guide No.: 128
2.7 Standard Industrial Trade Classification: 33429

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Hydrocarbon vapor canister or air pack; plastic gloves; goggles or face shield.
3.2 Symptoms Following Exposure: Primarily a narcotic, causing unconsciousness in high concentrations. The symptoms of acute benzene poisoning are not likely, since the compound has components other than benzene.
3.3 Treatment of Exposure: Remove from exposure. Support respiration. Call physician.
3.4 TLV-TWA: 400 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Leukemia
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause a smarting and reddening of the skin.
3.12 Odor Threshold: 4.68 ppm
3.13 IDLH Value: 1,000 ppm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 107°F C.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Foam, carbon dioxide, or dry chemical
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: 900–950°F
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 4 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: Not pertinent.
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: Currently not available
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: Purity varies with coal used and distillation range taken.
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
7.5 IMO Pollution Category: B
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: I
8.4 Marine Pollutant: Yes
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Liquid
9.2 Molecular Weight: Not pertinent
9.3 Boiling Point at 1 atm: 200–500°F = 93–260°C = 366-533°K
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.86–0.88 at 20°C (liquid)
9.8 Liquid Surface Tension: (est.) 20 dynes/cm = 0.020 N/m at 20°C
9.9 Liquid Water Interfacial Tension: (est.) 45 dynes/cm = 0.045 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: Currently not available
9.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.030
9.12 Latent Heat of Vaporization: (est.) 101 Btu/lb = 56.2 cal/g = 2.35 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –18,200 Btu/lb = –10,100 cal/g = –424 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.13 psia

NOTES

NAPHTHA: COAL TAR

NCT

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
50	53.680	50	0.478	50	1.040	50	9.343
52	53.680	52	0.478	52	1.040	52	8.841
54	53.680	54	0.478	54	1.040	54	8.370
56	53.680	56	0.478	56	1.040	56	7.927
58	53.680	58	0.478	58	1.040	58	7.511
60	53.680	60	0.478	60	1.040	60	7.119
62	53.680	62	0.478	62	1.040	62	6.751
64	53.680	64	0.478	64	1.040	64	6.404
66	53.680	66	0.478	66	1.040	66	6.078
68	53.680	68	0.478	68	1.040	68	5.770
70	53.680	70	0.478	70	1.040	70	5.481
72	53.680	72	0.478	72	1.040	72	5.207
74	53.680	74	0.478	74	1.040	74	4.950
76	53.680	76	0.478	76	1.040	76	4.707
78	53.680	78	0.478	78	1.040	78	4.477
80	53.680	80	0.478	80	1.040	80	4.260
82	53.680	82	0.478	82	1.040	82	4.056
84	53.680	84	0.478	84	1.040	84	3.862
86	53.680	86	0.478	86	1.040	86	3.679
88	53.680	88	0.478	88	1.040	88	3.506
90	53.680	90	0.478	90	1.040	90	3.342
92	53.680	92	0.478	92	1.040	92	3.187
94	53.680	94	0.478	94	1.040	94	3.040
96	53.680	96	0.478	96	1.040	96	2.901
98	53.680	98	0.478	98	1.040	98	2.770
100	53.680	100	0.478	100	1.040	100	2.645

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	90	0.094		N		C
	N	100	0.124		O		U
	S	110	0.163		T		R
	O	120	0.211				R
	L	130	0.272		P		E
	U	140	0.347		E		N
	B	150	0.440		R		T
	L	160	0.553		T		L
	E	170	0.691		I		Y
		180	0.856		N		
		190	1.054		E		N
		200	1.290		N		O
		210	1.569		T		T
		220	1.897				
		230	2.281				A
		240	2.728				V
		250	3.247				A
		260	3.846				I
		270	4.535				L
		280	5.323				A
		290	6.221				B
		300	7.241				L
		310	8.394				E
		320	9.695				
		330	11.160				
		340	12.790				

CYANIDE

Chemical reference numbers (CAS) of common forms: Cyanide 57-12-5, Zinc Cyanide 557-21-1, Sodium Cyanide 143-33-9, Potassium Cyanide 151-50-8, Hydrogen Cyanide 74-90-8

WHAT IS CYANIDE?

Cyanide is very poisonous. Cyanide can exist as a gas, liquid or white crystal powder. Cyanide is used in the electroplating industry, in metal cleaning operations, and as an industrial bug killer. Breathing the gas, eating the liquid or solid forms can make people suddenly lose consciousness or cause death.

There are no common uses of cyanide in the home. Most cyanide in the environment results from industrial processes and from improper waste disposal.

HOW ARE PEOPLE EXPOSED TO CYANIDE?

Breathing: Cyanide gas can be found in industrial emissions and car exhaust, cigarette smoke and certain papers and plastics as they burn. It is also possible to breathe or eat cyanide dust when working with cyanide powder. If people use a contaminated water supply, they can breathe cyanide when they cook or shower with the water.

Drinking/Eating: Cyanide is sometimes found in contaminated drinking water. People can be exposed when they drink contaminated water. People who handle contaminated soil may be exposed when they eat or touch their mouths with dirty hands.

Touching: Cyanide can enter the body through skin when people handle the chemical, contaminated soil or contaminated water. People can be exposed to cyanide if they wash or bathe with contaminated water.

DO STANDARDS EXIST FOR REGULATING CYANIDE?

Water: The federal drinking water standard for cyanide is set at 200 parts per billion (ppb). We suggest you stop drinking water containing more than 200 ppb of cyanide.

Air: No standards exist for the amount of cyanide allowed in the air of homes. We use a formula to convert workplace limits to suggested home limits. Based on the formula, we recommend cyanide levels be no higher than 90 ppb. Most people can't smell cyanide until levels reach 600 ppb. Cyanide compounds smell like bitter almonds to some people, while others cannot smell them at all. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of cyanide that can be released by industries.

WILL EXPOSURE TO CYANIDE RESULT IN HARMFUL HEALTH EFFECTS?

The following health effects are described in cases of suicide or accidental exposure to high levels of cyanide compounds. These effects are not expected following low-dose exposures:

- Irritation of skin and mucous membranes (causing redness or flushing of skin)
- Headaches, dizziness and loss of coordination
- Nausea and vomiting
- Rapid, deep breathing or gasping
- Rapid pulse rate and increased blood pressure
- Muscle spasms and convulsions
- Loss of consciousness and death.

The following health effects can occur after several years of exposure to low levels of cyanide:

Cancer: No studies show a relationship between exposure to cyanide and the development of cancer.

Reproductive Effects: Studies of laboratory animals show exposure to cyanide resulted in birth defects.

Organ Systems: Cyanide can cause nerve damage affecting hearing, vision, and muscle coordination. Damage to the thyroid gland is also possible, resulting in changes of metabolism in adults and slowing growth or development in children.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO CYANIDE?

Doctors can test urine for "thiocyanate" shortly after exposure to cyanide. Blood levels of cyanide can indicate recent exposure. Cigarette smokers generally have higher levels of cyanide-related compounds in their bodies than non-smokers.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: www.dhfs.state.wi.us/eh/index.htm

Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health, with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4594 *Revised* 12/2000)

POLYCHLORINATED BIPHENYL

PCB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Arochlor Chlorinated biphenyl Halogenated waxes PCB Polychloropolyphenyls	Oily liquid to solid powder Sinks in water.	Light yellow liquid, or white powder	Weak odor

Notify local health and pollution control agencies.
Protect water intakes.
Keep people away.
Avoid contact with liquid and solid.
Call fire department.

Fire	Combustible. Extinguish with water, foam, dry chemical, or carbon dioxide.
Exposure	CALL FOR MEDICAL AID. LIQUID OR SOLID Irritating to skin and eyes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Pump; Dredge
Clean shore line

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $(C_{12}H_{10-x})Cl_x$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: 2315
2.5 CAS Registry No.: 1336-36-3
2.6 NAERG Guide No.: 171
2.7 Standard Industrial Trade Classification: 51139

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Gloves and protective garments.
3.2 Symptoms Following Exposure: Acne from skin contact.
3.3 Treatment of Exposure: SKIN: wash with soap and water.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; oral rat LD_{50} = 3980 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Causes chromosomal abnormalities in rats, birth defects in birds
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of eyes and throat and cause eye and lung injury. They cannot be tolerated even at low concentrations.
3.11 Liquid or Solid Characteristics: Contact with skin may cause irritation.
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: >286°F
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Water, foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Irritating gases are generated in fires.
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: Currently not available
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: Not pertinent.
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity:
0.278 ppm/96 hr/bluegill/TL_m/fresh water
0.005 ppm/336-1080 hr/pinfish/TL_m/salt water
6.2 Waterfowl Toxicity: LD_{50} 2000 ppm (mallard duck)
6.3 Biological Oxygen Demand (BOD): Very low
6.4 Food Chain Concentration Potential: High
6.5 GESAMP Hazard Profile:
Bioaccumulation: +
Damage to living resources: 4
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: 11 grades (some liquid, some solids) which differ primarily in their chlorine content (20%-68% by weight)
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
7.5 IMO Pollution Category: Currently not available
7.6 Ship Type: Currently not available
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Class 9
8.2 49 CFR Class: 9
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: Yes
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: 1 pound
8.7 EPA Pollution Category: X
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Solid
9.2 Molecular Weight: Not pertinent
9.3 Boiling Point at 1 atm: Very high
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.3–1.8 at 20°C (liquid)
9.8 Liquid Surface Tension: Not pertinent
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Not pertinent
9.13 Heat of Combustion: Not pertinent
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

POLYCHLORINATED BIPHENYL

PCB

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
68	81.150		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT
69	81.150						
70	81.150						
71	81.150						
72	81.150						
73	81.150						
74	81.150						
75	81.150						
76	81.150						
77	81.150						
78	81.150						
79	81.150						
80	81.150						
81	81.150						
82	81.150						
83	81.150						
84	81.150						
85	81.150						

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	INSOLUBLE		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

POLYCHLORINATED BIPHENYLS (PCBs)

Also known as: Aroclor, Chlorinated Biphenyls, Kaneclor
Chemical reference number (CAS): 1336-36-3

WHAT ARE PCBs?

PCBs are a group of 209 different compounds. PCBs are man-made and have no smell. They are yellow, oily liquids that don't easily burn. There are no natural sources of PCBs.

Companies in the United States first made PCBs in 1929. They've been used as coolants in electrical equipment, metal-cutting oils, microscope lens oils, and in inks, dyes, and carbonless copy paper.

In 1977, the U.S. Environmental Protection Agency (EPA) banned the use of PCBs. The EPA was concerned about the harmful effects of PCBs. For example, PCBs can accumulate in the environment. PCBs may be present in old fluorescent light fixtures and parts of appliances made before 1978.

PCBs break down very slowly and can be carried long distances in the air, in rivers, lakes and oceans. PCBs can build up over time in the fat of people and animals. Recent studies found that most people have traces of PCBs in their body fat. PCBs can build-up in the food chain. For example, fish can have PCB levels in their fatty tissues that are much higher than the surrounding water.

HOW ARE PEOPLE EXPOSED TO PCBs

Drinking/Eating: For most people, eating fish or other seafood caught from polluted water is the main way in which they are exposed to PCBs.

Women who are pregnant or plan to have children should be especially cautious about eating contaminated fish. When people eat contaminated food over many years, PCBs can build up in their body fat. When people lose weight or breastfeed, their bodies use stored fat and put stored PCBs back into their blood. Babies may be exposed to PCBs in breast milk from mothers who often eat PCB contaminated fish.

Researchers have found high levels of PCBs in several types of fish, shellfish, marine mammals and waterfowl. In general, older animals living in polluted areas have the highest levels. State advisories are available for people who eat sport-caught fish and waterfowl. For more information, contact your regional Wisconsin Department of Natural Resources (DNR) office or call (608) 266-1877.

Touching: People can be exposed to PCBs in places where these chemicals were used, spilled, or thrown away. PCBs can be absorbed through skin during handling of the chemicals, contaminated soil or other contaminated items.

Breathing: Inhalation of PCB vapors or air is a minor source of contamination.

DO STANDARDS EXIST FOR REGULATING PCBs?

Food: The U.S. Food and Drug Administration (FDA) suggests not eating fish containing more than 2 parts per million of PCBs. This guidance assumes that a person eats two 8-ounce servings of fish per month, for every month of the year.

Water: The state and federal drinking water standard for PCBs are both set at 0.5 parts per billion (ppb). The Wisconsin groundwater standard is 0.03 ppb. Wisconsin's standard is to protect people against the possible cancer-causing effects of PCBs and the effects PCBs have on infants. We suggest you stop drinking water containing more than 0.03 ppb of PCBs.

WILL EXPOSURE TO PCBs RESULT IN HARMFUL HEALTH EFFECTS?

Researchers have found PCBs cause a number of harmful health effects. Exposure to high levels of PCBs, as might occur as a result of a chemical spill, can cause changes in the immune system and in liver function. The following health effects can occur after several years of exposure to PCBs:

Cancer: PCBs cause liver cancer in laboratory animals and may cause cancer in humans.

Reproductive Effects: Some limited animal and human studies suggest PCBs can effect reproduction and the development of unborn babies. Researchers have noted learning and memory problems in some children who were exposed to PCBs before birth.

Immunity: Animal studies show the immune system can be affected by PCBs.

Organ Systems: PCB exposure can cause liver damage.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

Each person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO PCBs?

Doctors can use blood tests to evaluate exposure to PCBs. This type of blood test is expensive and not always locally available. Testing can also detect PCBs in human fat or breast milk. Most testing of this type has been done for research purposes. Liver function tests may be helpful in determining damage from exposure.

Seek medical advice if you have any symptoms that you think may be related to exposure.

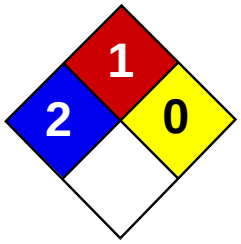
This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: www.dhfs.state.wi.us/eh/index.htm

Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health, with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4607 *Revised* 12/2000)



Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Antimony MSDS

Section 1: Chemical Product and Company Identification

Product Name: Antimony

Catalog Codes: SLA1453, SLA4462

CAS#: 7440-36-0

RTECS: CC4025000

TSCA: TSCA 8(b) inventory: Antimony

CI#: Not available.

Synonym: Stibium

Chemical Name: Not available.

Chemical Formula: Sb

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Antimony	7440-36-0	100

Toxicological Data on Ingredients: Antimony: ORAL (LD50): Acute: 7000 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to blood, kidneys, lungs, the nervous system, liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In

case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.5 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 121.75 g/mole

Color: Not available.

pH (1% soln/water): Not applicable.

Boiling Point: 1635°C (2975°F)

Melting Point: 630°C (1166°F)

Critical Temperature: Not available.

Specific Gravity: 6.691 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 7000 mg/kg [Rat].

Chronic Effects on Humans: Causes damage to the following organs: blood, kidneys, lungs, the nervous system, liver, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Human: passes through the placenta, excreted in maternal milk.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Antimony powder UNNA: UN2871 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Antimony Massachusetts RTK: Antimony TSCA 8(b) inventory: Antimony

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R36/38- Irritating to eyes and skin.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 05/21/2013 12:00 PM

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MATERIAL SAFETY DATA SHEET

UNITED MINERAL & CHEMICAL CORPORATION
1100 VALLEY BROOK AVENUE
LYNDHURST, NJ 07071
TEL: 201-507-3300 FAX: 201-507-1506

FOR EMERGENCY CALL:
C H E M T R E C
1-800-424-9300

SECTION A - PRODUCT INFORMATION

TRADE NAME : ARSENIC METAL:
MBE CHARGES, ARSENIC CHUNK & GRANULE

REVISION DATE : NOVEMBER 16, 2007

CAS NUMBER : 7440-38-2
SYNONYMS : METALLIC ARSENIC; GREY ARSENIC; ARSENIA
CHEMICAL FAMILY : METALS - GROUP 5a
FORMULA : As

SECTION B - HAZARDOUS COMPONENTS

COMPONENT	CAS NO.	%	PEL/TLV
ARSENIC METAL (As)	7440-38-2	100	0.01mg/m^3 ACGIH TWA AS As 0.01mg/m^3 OSHA TWA, INORGANIC COMPOUNDS AS As (SEE 29 CFR 1910.1018) 0.5 mg/m^3 OSHA TWA, ORGANIC COMPOUNDS AS As 0.002 mg/m^3/15 min. CEILING-NIOSH, INORGANIC CMPD. 5 mg As/m^3 IDLH-CARCINOGEN, INORGANIC COMPOUNDS

TWA – Time Weighted Average over 8 hours
IDLH - Immediately dangerous to life & health

See the OSHA Inorganic Arsenic Standard at 29 CFR 1910.1018 before processing.

SECTION C - PHYSICAL PROPERTIES

BOILING POINT (°C) : SUBLIMES @ 615
MELTING POINT (°C) : 817 @ 3.6477 Mpa
VAPOR PRESSURE (mm Hg) : 1mm @ 372ºC
VAPOR DENSITY (AIR=1) : N/A
SOLUBILITY IN WATER : INSOLUBLE
ODOR THRESHOLD : N/A
APPEARANCE & ODOR : SILVER GRAY CRYSTALLINE CHUNKS, RODS, OR GRANULES; NO ODOR AS METAL AS COMPOUND, AsH_3 HAS GARLIC ODOR

SPECIFIC GRAVITY : 5.72
FREEZING POINT (°) : N/A
PERCENT VOLATILE (BY WT.) : N/A
EVAPORATION RATE : N/A
pH (0 % IN WATER) : NONE

SECTION D - FIRE & EXPLOSION DATA

FLASH POINT (°) : NONE
FLAMMABLE LIMITS : **LEL** : **(N/A)** **UEL : (N/A)** **AUTO IGNITION TEMP (° F)**: **(UNKNOWN)**
EXTINGUISHING MEDIA : **WATER** : **()** **FOAM** : **(X)** **CO_2**: **(X)** **DRY CHEMICAL**: **(X)**

SPECIAL FIRE FIGHTING PROCEDURES : ARSENIC IN MASS FORM IS NON-FLAMMABLE. IN THE EVENT OF A FIRE, RESTRICT PERSONS NOT WEARING PROTECTIVE EQUIPMENT FROM AREA. TRY TO SNUFF FIRE WITH SAND, DRY MEDIA, FOAM OR CO_2. IF NO OTHER OPTIONS AVAILABLE, USE WATER & ALWAYS WEAR SELF CONTAINED BREATHING APPARATUS OR NIOSH TOXIC VAPOR RESPIRATOR. POISONOUS GASES ARE PRODUCED IN FIRE, INCLUDING ARSENIC OXIDES.

UNUSUAL FIRE & EXPLOSION HAZARDS : ARSENIC, WHEN HEATED OR IN CONTACT WITH ACID OR ACID FUMES, CAN PRODUCE HIGHLY TOXIC FUMES (SUCH AS ARSINE). ARSENIC REACTS VIGOROUSLY WITH OXIDIZING MATERIALS. ARSENIC IS FLAMMABLE IN THE FORM OF DUST WHEN EXPOSED TO HEAT OR FLAME OR BY CHEMICAL REACTION WITH POWERFUL OXIDIZERS (SEE SECTION E). SLIGHT EXPLOSION HAZARD EXISTS IN THE FORM OF DUST WHEN EXPOSED TO FLAME. IN THE EVENT OF A FIRE OR SPILL, CONTACT THE STATE DEPT. OF THE ENVIRONMENT & YOUR REGIONAL OFFICE OF THE FEDERAL ENVIRONMENTAL PROTECTION AGENCY.

SECTION E - REACTIVITY DATA

STABILITY : STABLE
INCOMPATIBILITY : HYDROGEN GAS CAN REACT WITH INORGANIC ARSENIC TO FORM THE HIGHLY TOXIC GAS ARSINE. INCOMPATIBLE WITH BROMINE AZIDE, DIRUBIDIUM ACETYLIDE, HALOGENS, PALLADIUM ZINC, PLATINUM, NCl_3, $AgNO_3$, CrO_3, Na_2O_2, HEXAFLUOROISOPROPYLIDENEAMINO LITHIUM. CAN REACT WITH ACIDS OR ACID FUMES AND POWERFUL OXIDIZERS SUCH AS BROMATES, CHLORATES, IODATES, PEROXIDES, LITHIUM, $NaCl_3$, KNO_3, $KMnO_3$, Rb_2C_2, $AgNO_4$, NOCl, IF_5, CrO_3, ClF_3, ClO, BrF_3, BrF_5, BrN_3, RbC_3BCH, CsC_3BCH.
HAZARDOUS DECOMPOSITION PRODUCTS : ARSENIC FUMES, ARSINE, OTHER ARSENIC COMPOUNDS
HAZARDOUS POLYMERIZATION : WILL NOT OCCUR
CONDITIONS TO AVOID : AVOID OPEN CONTAINERS AND CONTACT WITH INCOMPATIBLE MATERIALS

N/A = NOT APPLICABLE

SECTION F - PERSONAL PROTECTIVE EQUIPMENT INFO

RESPIRATORY EQUIPMENT : FOR HANDLING ELEMENTAL ARSENIC IN CHUNK, ROD, OR GRANULES USE NIOSH APPROVED, AIR PURIFYING, TOXIC VAPOR RESPIRATOR FOR PARTICULATE & FUME/ AIR LEVEL. IF PROCESSING MATERIAL INTO INORGANIC ARSENIC COMPOUNDS, CHOOSE PROPER RESPIRATORY PROTECTION IN ACCORDANCE WITH THE OSHA INORGANIC ARSENIC STANDARD AT 29 CFR 1910.1018 (h). FOR UNKNOWN CONCENTRATIONS OF INORGANIC ARSENIC OR UNDER FIRE-FIGHTING CONDITIONS USE FULL FACEPIECE SELF-CONTAINED BREATHING APPARATUS OPERATED IN POSITIVE PRESSURE MODE.

PROTECTIVE GLOVES : NEOPRENE OR PLASTIC

EYE PROTECTION : FACE SHIELD OR VENTED GOGGLES FOR WHEN DUST/ FUME OR INORGANIC COMPOUNDS ARE GENERATED.

VENTILATION : LOCAL EXHAUST/MECHANICAL(GENERAL) SCRUBBER OR TRAP IF POSSIBLE TO MAINTAIN EXPOSURE TO LESS THAN PERMISSIBLE LIMITS FOR ELEMENTAL ARSENIC AND ANY COMPOUNDS BEING GENERATED (SEE SECTION B)

OTHER PROTECTIVE EQUIPMENT : LAB COAT, COVERALLS, COVERLETS FOR SHOES, AND ACCESS TO EYEWASH FOUNTAIN FOR DUST OR INORGANIC COMPOUND GENERATION

SECTION G - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE : 0.01mg/m^3 TWA ARSENIC, ELEMENTAL & INORGANIC COMPOUNDS(EXCEPT ARSINE), AS As

PRIMARY ROUTES OF EXPOSURE : INHALATION OF FUMES, DUST, REACTION GASES; INGESTION; SKIN CONTACT

ORAL LD_{50} : 763 mg/m^3 RAT; ORAL RAT TDLo 605 micrograms/kg – REPRODUCTIVE EFFECTS; ORAL-MAN TDLo 7857 mg/kg/55 year old – SKIN & GASTROINTESTINAL EFFECTS

DERMAL IRRITATION-RABBIT : UNKNOWN; SUBCUTANEOUS RABBIT LDLo: 300 mg/kg

EYE IRRITATION-RABBIT : UNKNOWN

OSHA PEL : 0.01mg/m^3 TWA INORGANIC COMPOUNDS AS As; 0.5 mg/m^3 TWA ORGANIC COMPOUNDS AS As.

ACGIH TLV : 0.01mg/m^3 TWA ELEMENTAL ARSENIC & INORGANIC COMPOUNDS (EXCEPT ARSINE), AS As

EFFECTS OF OVEREXPOSURE : ARSENIC METAL IS NOT AS READILY AVAILABLE IN THE BODY AS ARSENIC IN THE FORM OF DUST OR VAPOR OR WHEN PROCESSED INTO ARSENIC COMPOUNDS (ARSENICALS). INORGANIC ARSENICALS ARE MORE TOXIC THAN ORGANIC ARSENICALS.

ACUTE EFFECTS: ARSENIC IS A POISON BY SUBCUTANEOUS, INTRAMUSCULAR, AND INTRAPERITONEAL ROUTES. ACUTE ARSENIC POISONING FROM INGESTION RESULTS IN BURNING LIPS, THROAT CONSTRICTION, ABDOMINAL PAIN, MARKED IRRITATION OF THE STOMACH AND INTESTINES WITH NAUSEA, VOMITING, AND DIARRHEA. IN SEVERE CASES THE STOOLS AND VOMIT ARE BLOODY AND THE PATIENT MAY GO INTO COLLAPSE AND SHOCK WITH WEAK, RAPID PULSE, COLD SWEATS, COMA, AND DEATH. INHALATION MAY CAUSE ULCERATION OF NASAL SEPTUM, RESPIRATORY IRRITATION (COUGH, SORE THROAT), SHORTNESS OF BREATH AND WEAKNESS. SKIN OR EYE CONTACT MAY CAUSE DERMATITIS, SKIN AND EYE IRRITATION. AFTER ABSORPTION, ARSENIC MAY CAUSE MULTI-ORGAN FAILURE AS DELAYED EFFECTS. ARSENIC IS AN EXPERIMENTAL TERATOGEN (MAY CAUSE DAMAGE TO THE DEVELOPING FETUS) AND MAY CAUSE SPONTANEOUS ABORTION OR STILLBIRTH WITH EITHER ACUTE OR CHRONIC POISONING.

CHRONIC EFFECTS: ARSENIC IS A CONFIRMED HUMAN CARCINOGEN AND HAS BEEN ASSOCIATED WITH LUNG, BLADDER, SKIN, AND OTHER CANCERS IN HUMANS. CHRONIC ARSENIC POISONING MAY INCLUDE ANY OR ALL OF THE FOLLOWING: DIGESTIVE SYSTEM DISTURBANCES, LOSS OF APPETITE, CRAMPS, NAUSEA, CONSTIPATION, DIARRHEA; LIVER DAMAGE WHICH MAY RESULT IN JAUNDICE; DISTURBANCES OF THE BLOOD, KIDNEYS AND NERVOUS SYSTEM; SKIN ABNORMALITIES INCLUDING ITCHING, PIGMENTATION, AND POSSIBLE CANCEROUS CHANGES. ARSENIC HAS INDUCED DNA DAMAGE IN HUMAN CELLS.

TARGET ORGANS (NIOSH) : (FOR INORGANIC COMPOUNDS AS As): LIVER, KIDNEYS, SKIN, LUNGS, LYMPHATIC SYSTEM

KNOWN EFFECTS ON OTHER ILLNESSES : EXPECTED TO AGGRAVATE PRE-EXISTING GASTROINTESTINAL, NERVOUS SYSTEM, SKIN, LIVER & KIDNEY PROBLEMS.

LISTED CARCINOGEN : NONE **()** OSHA **(YES)** NTP **(YES)** IARC **(YES)** OTHER **(YES)**

SECTION H – EMERGENCY & FIRST AID DATA

SKIN : FLUSH WITH SOAP & WATER. AVOID RUBBING INTO THE SKIN. CONTACT PHYSICIAN IMMEDIATELY.

EYES : FLUSH WITH WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER EYELIDS. CONTACT PHYSICIAN IMMEDIATELY.

INHALATION : REMOVE TO FRESH AIR. PROVIDE OXYGEN IF NECESSARY. CONTACT PHYSICIAN IMMEDIATELY.

INGESTION : IMMEDIATELY CALL POISON CONTROL OR A PHYSICIAN. DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY POISON CONTROL OR EMERGENCY MEDICAL PERSONNEL. TAKE TO HOSPITAL IMMEDIATELY.

MEDICAL NOTE: AGGRESSIVE DECONTAMINATION WITH GASTRIC LAVAGE IS RECOMMENDED. IF AN X-RAY INDICATES THE PRESENCE OF ARSENIC IN THE LOWER GI TRACT, WHOLE BOWEL IRRIGATION SHOULD BE CONSIDERED. ACTIVATED CHARCOAL MAY NOT BIND SIGNIFICANT AMOUNTS BUT IS RECOMMENDED UNTIL DEFINITIVE QUANTITATIVE DATA IS AVAILABLE. FLUID REPLETION SHOULD BEGIN AS SOON AS POSSIBLE.

SECTION I - SPILL & DISPOSAL INFORMATION

STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:

EVACUATE THE DANGER AREA. WEARING FULL PROTECTIVE EQUIPMENT (RESPIRATOR, GLOVES, GOGGLES, LAB COAT), GATHER UP CHUNKS, RODS, OR GRANULES WITH VACUUM OR UTENSILS RESERVED FOR POISONOUS SOLIDS AND PLACE IN SUITABLE CONTAINER AND SEAL. DO NOT RELEASE TO THE ENVIRONMENT. AVOID GENERATING DUST. VENTILATE THE AREA AFTER CLEANUP OF MATERIAL AND RESIDUE IS COMPLETE.

WASTE DISPOSAL INFORMATION:

SOLID WASTES SHOULD BE VITRIFIED, PLACED IN LABELED CONTAINER & BURIED IN AN EPA SUPERVISED FACILITY. ETCHING SOLUTIONS & CUTTING WASTES SHOULD BE PRECIPITATED, CEMENTED/VITRIFIED & PLACED IN METAL/PLASTIC LABELED CONTAINERS & BURIED IN EPA SUPERVISED FACILITY. PASS GAS THROUGH POTASSIUM PERMANGANATE, PRECIPITATE & TREAT AS ABOVE. WASTE MAY BE CONSIDERED HAZARDOUS DEPENDING ON LEVEL OF TOXICITY CHARACTERISTIC OF ARSENIC. SEE 40 CFR 261.24 FOR DETERMINATION.

RCRA HAZARDOUS WASTE : NO **()** YES **(**X)** **RCRA # : (****D004**)**

**** -** IF TESTED POSITIVE AS CHARACTERISTIC OF TOXICITY FOR ARSENIC

CERCLA : NO **()** YES **(X)** **RQ (**1 LB. RQ IS APPLICABLE ONLY IF THE DIAMETER OF THE PIECES OF THE SOLID METAL RELEASED IS LESS THAN 100 MICROMETERS OR 0.004 INCH. THIS PRODUCT FORM IS LARGER THAN 100 MICROMETERS AND HAS NO RQ IN ITS CURRENT FORM. IF AS HAZARDOUS WASTE CHARACTERISTIC OF ARSENIC, THEN RQ=1 LB.**)**

FOLLOW ALL LOCAL, STATE AND FEDERAL INFORMATION AND REGULATIONS

SECTION J - OTHER REGULATORY INFORMATION

TSCA: WE CERTIFY THAT ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCES CONTROL ACT.

SARA TITLE III, SECT. 313: **LISTED (X)** **UNLISTED ()**

DOT REGULATED: **YES: (**X**)** **NO: ()** **RQ: (**N/A - PIECES ARE LARGER THAN 100 MICROMETERS IN DIAMETER**)**

IF REGULATED, PROPER SHIPPING NAME: ARSENIC **HAZARD CLASS: (**6.1**)**

IDENTIFICATION NO.: (UN1558**)** **PACKING GROUP: (**II**)** **LABEL REQUIRED: (**POISON**)**

INLAND B/L: UN1558, ARSENIC, 6.1, PACKING GROUP II, POISON

EMERGENCY RESPONSE GUIDE NO.: (152**)**

SECTION K - SPECIAL PRECAUTIONS

FOR INDUSTRIAL USE ONLY

HANDLING & STORAGE INFORMATION:

PRIOR TO WORKING WITH ARSENIC, PERSONNEL SHOULD BE TRAINED IN PROPER HANDLING & STORAGE. STORE IN ORIGINAL PACKAGING IN COOL DRY AREA. WHEN HANDLING, WEAR FULL PROTECTIVE EQUIPMENT (SEE SECTION F). PLACE INTO INERT ATMOSPHERE IMMEDIATELY. IF PROCESSING INTO INORGANIC ARSENIC COMPOUNDS, FOLLOW THE OSHA STANDARD AT 29 CFR 1910.1018. DO NOT INGEST. DO NOT INHALE DUST OR ANY PROCESSING FUMES. AVOID SKIN AND EYE CONTACT.

NOTE: MAINTENANCE PERSONNEL OF PROCESSING AND EXTRACT EQUIPMENT MUST ALSO WEAR FULL PROTECTIVE EQUIPMENT (SEE SECTION F) AND OBSERVE THE REQUIREMENTS OF THE OSHA INORGANIC ARSENIC STANDARD (29 CFR 1910.1018) AS RESIDUES MAY CONTAIN ARSENIC PARTICLES AND VARYING COMPOUNDS OF ARSENIC.

OTHER PRECAUTIONS :

MINIMUM - HAVE QUARTERLY MEDICAL CHECKS INCLUDING URINE TESTS OF PERSONNEL WORKING WITH ARSENIC OR ARSENIC COMPOUNDS. DO NOT EAT, DRINK OR SMOKE IN THE WORK AREA.

IN ACCORDANCE WITH GOOD PRACTICES OF PERSONAL HYGIENE, HANDLE WITH DUE CARE AND AVOID ANY UNNECESSARY CONTACT WITH THIS PRODUCT.
THIS INFORMATION IS BEING SUPPLIED TO YOU UNDER OSHA "RIGHT TO KNOW" REGULATION 29 CFR 1910.1200 AND IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS PRODUCT SPECIFICATION. THE INFORMATION IS BELIEVED TO BE TRUE AND ACCURATE. NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THIS DATA, THE HAZARD CONNECTED WITH USE OF THE MATERIAL, OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, IS MADE. UNITED MINERAL AND CHEMICAL CORPORATION AND ITS SUPPLIERS ASSUME NO RESPONSIBILITY FOR DAMAGE OR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.
UNITED MINERAL & CHEMICAL CORPORATION

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Cadmium
Catalog Numbers:
S79935, C3 500, C3-500, C3500
Synonyms:
Colloidal cadmium
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
7440-43-9	**Cadmium**	ca.100	231-152-8

Hazard Symbols: T+ F
Risk Phrases: 11 25 26 45

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Highly flammable. Toxic if swallowed. Very toxic by inhalation. May cause cancer.Cancer suspect agent.Air sensitive.

Potential Health Effects

Eye:
Causes eye irritation.

Skin:
Causes skin irritation.

Ingestion:
Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion may produce fluid loss, acute renal failure, and cardiopulmonary depression.

Inhalation:
May be fatal if inhaled. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. Damage may be delayed. May cause nausea, vomiting, abdominal pain, diarrhea, chest tightness, weakness, and delayed pulmonary edema. In humans inhalation causes proteinuria, an excess of protein in the urine.

Chronic:
May cause respiratory tract cancer. Repeated inhalation may cause chronic bronchitis. Chronic inhalation may cause nasal septum ulceration and perforation. **Cadmium** and compounds may cause lung, liver and kidney damage and lung and prostrate cancer in humans. May cause loss of smell, emphysema, anemia, bone demineralization, and lung fibrosis.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:
Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:
Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use

mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Blood **cadmium** levels are not indicative of exposure. Administration of Calcium Disodium EDTA may be useful in acute poisoning with its use at the discretion of qualified medical personnel. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dust can be an explosion hazard when exposed to heat or flame. Flammable solid. May burn rapidly with flare burning effect. May re-ignite after fire is extinguished. Dangerous fire hazard in the form of dust when exposed to heat or flame.

Extinguishing Media:

Do NOT use water directly on fire. Use dry chemical to fight fire. Cool containers with flooding quantities of water until well after fire is out.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Place under an inert atmosphere.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Avoid contact with skin and eyes. Do not breathe dust, vapor, mist, or gas. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid contact with heat, sparks and flame. Do not ingest or inhale. Handle under an inert atmosphere. Store protected from air. Use only in a chemical fume hood. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store under an inert atmosphere.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent

skin
exposure.
Clothing:
Wear appropriate protective clothing to prevent skin
exposure.
Respirators:
A respiratory protection program that meets OSHA's 29
CFR :1910.134 and ANSI Z88.2 requirements or European
Standard EN 149 must be followed whenever workplace
conditions warrant a respirator's use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Powder
Appearance:	silver white
Odor:	odorless
pH:	Not available.
Vapor Pressure:	1 mm Hg @ 394 deg C
Vapor Density:	Not available.
Evaporation Rate:	Not applicable.
Viscosity:	Not applicable.
Boiling Point:	765 deg C
Freezing/Melting Point:	321 deg C
Autoignition Temperature:	Not available.
Flash Point:	Not available.
Explosion Limits, lower:	Not available.
Explosion Limits, upper:	Not available.
Decomposition Temperature:	Not available.
Solubility:	Insoluble.
Specific Gravity/Density:	8.65 @ 25&C
Molecular Formula:	Cd
Molecular Weight:	112.41

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Oxidizes when exposed to air. Easily tarnishes in moist air. Powder
or liquid is pyrophoric.
Conditions to Avoid:
Incompatible materials, ignition sources, dust generation, exposure
to air, excess heat.
Incompatibilities with Other Materials:
Air, nitric acid, hydrochloric acid, hydrazoic acid, nitryl

fluoride,
ammonium nitrate, zinc, oxidizing agents, acids, hydrogen azide,
potassium, sulfur, selenium, tellurium, metals, carbonates, cyanides
(e.g. potassium cyanide, sodium cyanide), hydroxides, reducing agents
(strong, e.g. aluminum carbide, chlorosilane, hydrogen phosphide,
lithium hydride).

Hazardous Decomposition Products:
Nitrogen oxides, toxic **cadmium** oxide fumes.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 7440-43-9: EU9800000

LD50/LC50:
CAS# 7440-43-9: Inhalation, rat: LC50 = 25 mg/m3/30M; Oral, mouse:
LD50 = 890 mg/kg; Oral, rat: LD50 = 2330 mg/kg.

Carcinogenicity:
Cadmium -
ACGIH: A2 - suspected human carcinogen (elemental)
California: carcinogen; initial date 10/1/87
NIOSH: occupational carcinogen
NTP: Known carcinogen
OSHA: Select carcinogen
IARC: Group 1 carcinogen

Epidemiology:
Occupational exposure to **cadmium** has been implicated in a significant
increase in prostate and respiratory tract cancer. There is evidence
of a significant excess of respiratory cancer deaths among a cohort
of **cadmium** production workers, and concluded that **cadmium** and its
compounds are potential carcinogens.

Teratogenicity:
Oral, rat: TDLo = 155 mg/kg (male 13 week(s) pre-mating and female 13
week(s) pre-mating - 3 week(s) after conception) Effects on Newborn -
growth statistics (e.g.%, reduced weight gain) and Effects on Newborn
- behavioral.; Oral, rat: TDLo = 23 mg/kg (female 1-22 day (s) after

conception) Specific Developmental Abnormalities - blood and lymphatic systems (including spleen and marrow).; Oral, mouse: TDLo = 1700 mg/kg (female 8-12 day(s) after conception) Effects on Newborn - viability index (e.g., # alive at day 4 per # born alive) and Effects on Newborn - growth statis

Reproductive Effects:

Oral, rat: TDLo = 21500 ug/kg (multigenerations) Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea).; Intraperitoneal, rat: TDLo = 1124 ug/kg (male 1 day(s) pre-mating) Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count).

Neurotoxicity:

No information available.

Mutagenicity:

Micronucleus Test: Mouse, Embryo = 6 umol/L.; Cytogenetic Analysis: Hamster, Ovary = 1 umol/L.

Other Studies:

The long-term ingestion of water, beans and rice contaminated with **cadmium** has been proposed as the probable cause of crippling condition (itai-itai disease) among Japanese women who have had multiple pregnancies. Characteristics of the disorder are: pain in the back and joints, a waddly gait, osteomalacia, bone fractures, and occasional fatal renal failure.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:

Fish: Rainbow trout: TLm = 30 ppm; 24 Hr; Hard waterFish: Striped bass: LC50 = 0.001 ppm; 24-48 Hr; Static bioassayFish: Fathead Minnow: TL50 = 7.2 ppm; 96 Hr; UnspecifiedFish: Bluegill/Sunfish: LCO = 0.08 ppm; 96 Hr; Static bioassay (Hard water)

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: FLAMMABLE SOLID, INORGANIC, N.O.S. (**CADMIUM**)
Hazard Class: 4.1
UN Number: UN3178
Packing Group: III
Canadian TDG
Shipping Name: FLAMMABLE SOLID NOS (**CADMIUM** METAL)
Hazard Class: 4.1
UN Number: UN1325

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL
TSCA
CAS# 7440-43-9 is listed on the TSCA inventory.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
CAS# 7440-43-9 is listed as a Priority Pollutant under the Clean Water Act.
CAS# 7440-43-9 is listed as a Toxic Pollutant under the Clean Water Act.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
Cadmium can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains **Cadmium**, a chemical known to the state of California to cause cancer.
WARNING: This product contains **Cadmium**, a chemical known to the state of California to cause birth defects or other reproductive harm.
California No Significant Risk Level:

CAS# 7440-43-9: inhalation: no significant risk level = 0.05 ug/day

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T+ F

Risk Phrases:

R 11 Highly flammable.
R 25 Toxic if swallowed.
R 26 Very toxic by inhalation.
R 45 May cause cancer.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7440-43-9: No information available.

United Kingdom Occupational Exposure Limits

Canada

CAS# 7440-43-9 is listed on Canada's DSL List.
CAS# 7440-43-9 is listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 7440-43-9: OEL-ARAB Republic of Egypt:TWA 0.05 mg/m3
OEL-AUSTRALIA:TWA 0.05 mg/m3
OEL-BELGIUM:TWA 0.05 mg/m3
OEL-CZECHOSLOVAKIA:TWA 0.05 mg/m3;STEL 0.1 mg/m3
OEL-DENMARK:TWA 0.01 mg/m3
OEL-FINLAND:TWA 0.02 mg/m3;Carcinogen
OEL-GERMANY;Carcinogen
OEL-INDIA:TWA 0.05 mg/m3
OEL-JAPAN:TWA 0.05 mg/m3
OEL-THE NETHERLANDS:TWA 0.02 mg/m3;STEL 0.1 mg/m3
OEL-THE PHILIPPINES:TWA 0.2 mg/m3
OEL-RUSSIA:TWA 0.01 mg/m3;STEL 0.05 mg/m3
OEL-SWEDEN:TWA 0.02 mg/m3;Carcinogen
OEL-SWITZERLAND:TWA 0.05 mg/m3
OEL-THAILAND:TWA 0.2 mg/m3;STEL 0.5 mg/m3
OEL-TURKEY:TWA 0.2 mg/m3
OEL-UNITED KINGDOM:TWA 0.01 mg/m3
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 6/28/1999 Revision #2 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

Back to MSDS page

Material Safety Data Sheet

Science Stuff, Inc.
1104 Newport Ave
Austin, TX 78753

Phone (512) 837-6020
Chemtrec 800-424-9300
24 Hour Emergency Assistance

Section 1 Identification

Product Number:	C1504
Product Name:	Chromium Metal Powder, 100 Mesh, 99.5%
Trade/Chemical Synonyms	
Formula:	Cr
RTECS:	GB4200000
C.A.S	CAS# 7440-47-3

Health:	2
Flammability	2
Reactivity	0

Hazard Rating:

Least	Slight	Moderate	High	Extreme
0	1	2	3	4

NA = Not Applicable NE = Not Established

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
✔	Chromium Metal Powder, 100 Mesh, 99.5%	CAS# 7440-47-3	100%	W/W	OSHA TWA 1 mg/mƒ

Section 3 Hazard Identification (Also see section 11)

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Section 4 First Aid Measures

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: SKIN: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type:	Carbon Dioxide, dry chemical or sand. Do not disturb burning metal while extinguishing the fire.
Fire/Explosion Hazards:	Dust at sufficient concentrations can form explosive mixtures with air.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Sweep up and place in suitable (fiberboard) containers for reclamation or later disposal.

Section 7 Handling and Storage

Precautions such as the use of inert atmosphere are advisable when sizing material to minus 100 mesh and when 50% is minus 200 mesh

Section 8 Exposure Controls & Personal Protection

Respiratory Protection: NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☐ Local Exhaust: ✔

Hand Protection: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Section 9 Physical and Chemical Properties

Melting Point:	3326 Deg. F	Specific Gravity	7.14
Boiling Point:	3992 Deg. F	Percent Volatile by Volume:	N/A
Vapor Pressure:	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	Evaporation Standard:	
Solubility in Water:	Not soluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:		Lower Flamm. Limit in Air:	Not applicable
Flash Point:	N/A	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable

Conditions to Avoid: Avoid contact with incompatible materials.

Materials to Avoid:
Acidic conditions

Hazardous Decomposition Products:
Not known to occur

Hazardous Polymerization: Will Not Occur

Condition to Avoid: None known

Section 11 Additional Information

Overexposure to dust may irritate eyes, nose or throat. Conditions aggravated/target organs. Persons with pre-existing eye, skin or respiratory conditions may be more susceptible.

DOT Classification: Metal Powder, Flammable, n.o.s. (Chromium Metal Powder), 4.1, UN3089, PG III

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0	Date Entered: 9/1/2006	Approved by: WPF

The information contained herein is believed to be accurate and is offered in good faith for the user's consideration and investigation. No warranty is expressed or implied regarding the completeness or accuracy of this information, whether originating from Science Stuff, Inc. or from an alternate source. Users of this material should satisfy themselves by independent investigation of current scientific and medical information that this material may be safely handled.

MSDS Number: **L2347** * * * * * *Effective Date:* ***09/15/09*** * * * * * *Supercedes:* ***07/05/07***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

LEAD METAL

1. Product Identification

Synonyms: Granular lead, pigment metal; C.I. 77575
CAS No.: 7439-92-1
Molecular Weight: 207.19
Chemical Formula: Pb
Product Codes:
J.T. Baker: 2256, 2266
Mallinckrodt: 5668

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Lead	7439-92-1	95 - 100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. NEUROTOXIN. AFFECTS THE GUM TISSUE, CENTRAL NERVOUS SYSTEM, KIDNEYS, BLOOD AND REPRODUCTIVE SYSTEM. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Cancer Causing)
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Lead can be absorbed through the respiratory system. Local irritation of bronchia and lungs can occur and, in cases of acute exposure, symptoms such as metallic taste, chest and abdominal pain, and increased lead blood levels may follow. See also Ingestion.
Ingestion:
POISON! The symptoms of lead poisoning include abdominal pain and spasms, nausea, vomiting, headache. Acute poisoning can lead to muscle weakness, "lead line" on the gums, metallic taste, definite loss of appetite, insomnia, dizziness, high lead levels in blood and urine

with shock, coma and death in extreme cases.
Skin Contact:
Lead and lead compounds may be absorbed through the skin on prolonged exposure; the symptoms of lead poisoning described for ingestion exposure may occur. Contact over short periods may cause local irritation, redness and pain.
Eye Contact:
Absorption can occur through eye tissues but the more common hazards are local irritation or abrasion.
Chronic Exposure:
Lead is a cumulative poison and exposure even to small amounts can raise the body's content to toxic levels. The symptoms of chronic exposure are like those of ingestion poisoning; restlessness, irritability, visual disturbances, hypertension and gray facial color may also be noted.
Aggravation of Pre-existing Conditions:
Persons with pre-existing kidney, nerve or circulatory disorders or with skin or eye problems may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard. Powder/dust is flammable when heated or exposed to flame.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Do not allow water runoff to enter sewers or waterways.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Can produce toxic lead fumes at elevated temperatures and also react with oxidizing materials.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Areas in which exposure to lead metal or lead compounds may occur should be identified by signs or appropriate means, and access to the area should be limited to authorized persons. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For lead, metal and inorganic dusts and fumes, as Pb:
-OSHA Permissible Exposure Limit (PEL): 0.05 mg/m3 (TWA)
For lead, elemental and inorganic compounds, as Pb:
-ACGIH Threshold Limit Value (TLV): 0.05 mg/m3 (TWA), A3 animal carcinogen

ACGIH Biological Exposure Indices (BEI): 30 ug/100ml, notation B (see actual Indices for more information).
For lead, inorganic:
-NIOSH Recommended Exposure Limit (REL): 0.1 mg/m3 (TWA)
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face high efficiency particulate respirator (NIOSH type N100 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece high efficiency particulate respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.
WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.
Other Control Measures:
Eating, drinking, and smoking should not be permitted in areas where solids or liquids containing lead compounds are handled, processed, or stored. See OSHA substance-specific standard for more information on personal protective equipment, engineering and work practice controls, medical surveillance, record keeping, and reporting requirements. (29 CFR 1910.1025).

---

9. Physical and Chemical Properties

Appearance:
Small, white to blue-gray metallic shot or granules.
Odor:
Odorless.
Solubility:
Insoluble in water.
Density:
11.34
pH:
No information found.
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
1740C (3164F)
Melting Point:
327.5C (622F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
1.77 @ 1000C (1832F)
Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Does not decompose but toxic lead or lead oxide fumes may form at elevated temperatures.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Ammonium nitrate, chlorine trifluoride, hydrogen peroxide, sodium azide, zirconium, disodium acetylide, sodium acetylide and oxidants.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

---

11. Toxicological Information

Toxicological Data:

Investigated as a tumorigen, mutagen, reproductive effector.
Reproductive Toxicity:
Lead and other smelter emissions are human reproductive hazards. (Chemical Council on Environmental Quality; Chemical Hazards to Human Reproduction, 1981).
Carcinogenicity:
EPA / IRIS classification: Group B2 - Probable human carcinogen, sufficient animal evidence.

```
--------\Cancer Lists\-----------------------------------------------------
                                   ---NTP Carcinogen---
Ingredient                         Known    Anticipated    IARC Category
-----------------------------------  -----    -----------    -------------
Lead (7439-92-1)                    No          No             2B
```

12. Ecological Information

Environmental Fate:
When released into the soil, this material is not expected to leach into groundwater. This material may bioaccumulate to some extent.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

```
--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                      TSCA  EC   Japan  Australia
----------------------------------------------  ----  ---  -----  ---------
Lead (7439-92-1)                                 Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                        --Canada--
Ingredient                                      Korea  DSL   NDSL  Phil.
----------------------------------------------  -----  ---   ----  -----
Lead (7439-92-1)                                 Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Lead (7439-92-1)                          No    No      Yes        No

--------\Federal, State & International Regulations - Part 2\----------------
                                                       -RCRA-    -TSCA-
Ingredient                                CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Lead (7439-92-1)                          10         No         No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Pure / Solid)
```

WARNING:
THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Australian Hazchem Code: None allocated.
Poison Schedule: S6
WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **3** Flammability: **1** Reactivity: **0**
Label Hazard Warning:
POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. NEUROTOXIN. AFFECTS THE GUM TISSUE, CENTRAL NERVOUS SYSTEM, KIDNEYS, BLOOD AND REPRODUCTIVE SYSTEM. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe dust.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
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****
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **M1599** * * * * * *Effective Date:* ***08/20/08*** * * * * * *Supercedes:* ***12/19/05***

MSDS *Material Safety Data Sheet*

From: **Mallinckrodt Baker, Inc.**
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

MERCURY

1. Product Identification

Synonyms: Quicksilver; hydrargyrum; Liquid Silver
CAS No.: 7439-97-6
Molecular Weight: 200.59
Chemical Formula: Hg
Product Codes:
J.T. Baker: 2564, 2567, 2569
Mallinckrodt: 1278, 1280, 1288

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Mercury	7439-97-6	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM. MAY CAUSE ALLERGIC SKIN REACTION.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 4 - Extreme (Life)
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Mercury vapor is highly toxic via this route. Causes severe respiratory tract damage. Symptoms include sore throat, coughing, pain, tightness in chest, breathing difficulties, shortness of breath, headache, muscle weakness, anorexia, gastrointestinal disturbance, ringing in the ear, liver changes, fever, bronchitis and pneumonitis. Can be absorbed through inhalation with symptoms similar to ingestion.
Ingestion:
May cause burning of the mouth and pharynx, abdominal pain, vomiting, corrosive ulceration, bloody diarrhea. May be followed by a rapid and weak pulse, shallow breathing, paleness, exhaustion, tremors and collapse. Delayed death may occur from renal failure. Gastrointenstinal uptake of mercury is less than 5% but its ability to penetrate tissues presents some hazard. Initial symptoms may be thirst, possible abdominal discomfort.

Skin Contact:
Causes irritaton and burns to skin. Symptoms include redness and pain. May cause skin allergy and sensitization. Can be absorbed through the skin with symptoms to parallel ingestion.
Eye Contact:
Causes irritation and burns to eyes. Symptoms include redness, pain, blurred vision; may cause serious and permanent eye damage.
Chronic Exposure:
Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behavior changes, memory loss, metallic taste, loosening of the teeth, digestive disorders, skin rashes, brain damage and kidney damage. Can cause skin allergies and accumulate in the body. Repeated skin contact can cause the skin to turn gray in color. A suspected reproductive hazard; may damage the developing fetus and decrease fertility in males and females.
Aggravation of Pre-existing Conditions:
Persons with nervous disorders, or impaired kidney or respiratory function, or a history of allergies or a known sensitization to mercury may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Do not allow water runoff to enter sewers or waterways.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Undergoes hazardous reactions in the presence of heat and sparks or ignition. Smoke may contain toxic mercury or mercuric oxide. Smoke may contain toxic mercury or mercuric oxide.

6. Accidental Release Measures

Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from vapor.

Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate misting. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Do not flush to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker CINNASORB® and RESISORB® are recommended for spills of this product.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Do not use or store on porous work surfaces (wood, unsealed concrete, etc.). Follow strict hygiene practices. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Acceptable Ceiling Concentration:
mercury and mercury compounds: 0.1 mg/m3 (TWA), skin
- ACGIH Threshold Limit Value (TLV):
inorganic and metallic mercury, as Hg: 0.025 mg/m3 (TWA) skin, A4 Not classifiable as a human carcinogen.
- ACGIH Biological Exposure Indices:
total inorganic mercury in urine (preshift): 35 ug/g creatinine;
total inorganic mercury in blood (end of shift): 15 ug/l.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with a mercury vapor or chlorine gas cartridge may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with a mercury vapor or chlorine gas cartridge may be worn up to 50 times the exposure limit, or the maximum use concentraiton specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Silver-white, heavy, mobile, liquid metal.

Odor:
Odorless.

Solubility:
Insoluble in water.

Density:
13.55

pH:
No information found.

% Volatiles by volume @ 21C (70F):
100

Boiling Point:
356.7C (675F)

Melting Point:
-38.87C (-38F)

Vapor Density (Air=1):
7.0

Vapor Pressure (mm Hg):
0.0018 @ 25C (77F)

Evaporation Rate (BuAc=1):
4

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
At high temperatures, vaporizes to form extremely toxic fumes.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Acetylenes, ammonia, ethylene oxide, chlorine dioxide, azides, metal oxides, methyl silane, lithium, rubidium, oxygen, strong oxidants, metal carbonyls.

Conditions to Avoid:
Heat, flames, ignition sources, metal surfaces and incompatibles.

11. Toxicological Information

Toxicological Data:

Investigated as a tumorigen, mutagen, reproductive effector.
Reproductive Toxicity:
All forms of mercury can cross the placenta to the fetus, but most of what is known has been learned from experimental animals. See Chronic Health Hazards.
Carcinogenicity:
EPA / IRIS classification: Group D1 - Not classifiable as a human carcinogen.

```
--------\Cancer Lists\-----------------------------------------------------
                                    ---NTP Carcinogen---
Ingredient                          Known    Anticipated    IARC Category
------------------------------------  -----    -----------    -------------
Mercury (7439-97-6)                  No          No              3
```

12. Ecological Information

Environmental Fate:
This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. This material is expected to significantly bioaccumulate.
Environmental Toxicity:
This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: RQ, MERCURY
Hazard Class: 8
UN/NA: UN2809
Packing Group: III
Information reported for product/size: 1LB

International (Water, I.M.O.)

Proper Shipping Name: MERCURY
Hazard Class: 8
UN/NA: UN2809
Packing Group: III
Information reported for product/size: 1LB

15. Regulatory Information

```
--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                        TSCA  EC   Japan  Australia
----------------------------------------------  ----  ---  -----  ---------
Mercury (7439-97-6)                               Yes  Yes   No       Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                         --Canada--
Ingredient                                        Korea  DSL   NDSL  Phil.
----------------------------------------------  -----  ---   ----  -----
Mercury (7439-97-6)                               Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Mercury (7439-97-6)                       No    No      Yes        No

--------\Federal, State & International Regulations - Part 2\----------------
                                                         -RCRA-    -TSCA-
Ingredient                                CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Mercury (7439-97-6)                       1          U151       No
```

```
Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Pure / Liquid)
```

WARNING:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Australian Hazchem Code: 2Z
Poison Schedule: S7
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM. MAY CAUSE ALLERGIC SKIN REACTION.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

ESPI METALS

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MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer/Supplier:

ESPI Metals

1050 Benson Way, Ashland, OR 97520

Toll Free (800) 638-2581 * Fax (541) 488-8313

E-Mail: sales@espimetals.com

Product Name: Thallium

Formula: Tl

CAS Number: 7440-28-0

II. HAZARDOUS INGREDIENTS

Hazardous Component: Thallium

Percent (%): 0-100

OSHA/PEL: 0.1 mg/m^3

ACGIH/TLV: 0.1 mg/m^3

HMIS Ratings:

Health: 3

Flammability: 0

Reactivity: 1

III. PHYSICAL DATA

Boiling Point: 1457 °C " 10 °C

Melting Point: 303.5 °C

Specific Gravity: 11.85 g/cc at 20 °C

Vapor Pressure: 1 mm at 825 °C

Solubility in H_2O: Insoluble

Appearance and Odor: Blue-white pieces, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Autoignition Temperature: N/E

Flammable Limits: Lower: N/A **Upper:** N/A

Extinguishing Media: Use suitable extinguishing media for surrounding materials and type of fire.

Online Catalog

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Thallium

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ONLINE

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Contact

ESPI Metals
1050 Benson Way
Ashland, Oregon 97520

541.488.8311 telephone
800.638.2581 toll-free

541.488.8313 fax
800.488.0060 toll-free fax

sales@espimetals.com

Precious Metal Prices

Aug 05,2014 at 12:31 New York

	Price	Change	High
Gold	1284.80	-3.40	1294.30
Silver	19.81	-0.32	20.36
Platinum	1450.00	-8.00	1472.00
Palladium	842.00	-10.00	863.00

Special Fire Fighting Procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards: When heated to decomposition, thallium may emit toxic fumes of thallium. Flammable in the form of dust when exposed to heat or flame. May have a violent reaction with F_2. Reacts slowly with moisture. Reacts with some acids.

Conversion Tool

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V. HEALTH HAZARD INFORMATION

Effects of Exposure: To the best of our knowledge the chemical, physical and toxicological properties of thallium have not been thoroughly investigated and recorded.

Thallium compounds are extremely toxic. Effects are cumulative and with continuous exposure toxicity occurs at much lower levels. Effects are on the nervous system, skin, and cardiovascular tract. The peripheral nervous system can be severely affected with dying-back of the longest sensory and motor fibers. Reproductive organs and the fetus are highly susceptible. (Sax, Dangerous Properties of Industrial Materials)

Acute Effects:

Inhalation: DANGER - POISON. May cause irritation to the mucous membrane, running nose, headache and pulmonary edema.

Ingestion: DANGER - POISON. May cause discoloration and loss of hair, joint pain, loss of appetite, fatigue, severe pain in the calves of the legs, albuminuria, eosinophilia, lymphocytosis and optic neuritis followed by atrophy. Large doses may cause gastrointestinal hemorrhage, gastroenteritis, metallic taste, salivation, nausea and vomiting.

Skin: May cause irritation.

Eye: May cause irritation.

Chronic Effects:

Inhalation: May cause neurologic symptoms, delirium, hallucinations, convulsions, tingling pain in the extremities, muscular weakness, coma and respiratory failure.

Ingestion: May cause alopecia, cardiac and renal disorders, endocrine disorders, psychoses, encephalitis and paralysis of the extremities.

Skin: No data

Eye: No chronic health effects recorded.

Target Organs: May affect the central nervous system, skin, eyes, cardiovascular tract, lungs, gastrointestinal tract and body hair.

Carcinogenicity: NTP: No **IARC:** No **OSHA:** No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention immediately.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediately. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if irritation if irritation persists.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation persists.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None

Incompatibility (Materials to Avoid): Oxidizing agents, acids, halogens and antimony sulfide.

Hazardous Decomposition Products: Fumes of thallium.

Hazardous Polymerization: Will not occur.

VII. SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled: Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste Disposal Method: Dispose of in accordance with Local, State and Federal Waste Disposal Regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): NIOSH approved dust respirator.

Ventilation: Handle under protective gas. Use local exhaust to maintain concentration at or below PEL, TLV. General exhaust is recommended.

Protective Gloves: Neoprene, PVC, butyl gloves.

Eye Protection: Safety glasses.

Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination

IX. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Store in a tightly sealed container in a cool, dry, well-ventilated area. Handle and store under water or protective gas. Protect from air and oxidizing agents. Wash thoroughly after use.

Precautionary Labeling: DANGER! HIGHLY TOXIC! May be fatal if swallowed or inhaled. Avoid contact with skin and eyes. Wash very thoroughly after handling. Keep container tightly closed when not in use.

Work Practices: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

DOT Regulations:

Hazard Class: 6.1

Identification Number: UN1707

Packing Group: II

Proper Shipping Name: Thallium compounds, n.o.s., (thallium)

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Prepared by: S. Dierks

Dated: May 2006

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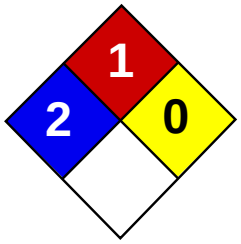

Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Selenium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Selenium

Catalog Codes: SLS2629

CAS#: 7782-49-2

RTECS: VS7700000

TSCA: TSCA 8(b) inventory: Selenium

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: Se

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Selenium	7782-49-2	100

Toxicological Data on Ingredients: Selenium: ORAL (LD50): Acute: 6700 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Material in powder form, capable of creating a dust explosion.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label.

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.2 (mg/m3) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid metallic powder.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 78.96 g/mole

Color: Not available.

pH (1% soln/water): Not applicable.

Boiling Point: 684.9°C (1264.8°F)

Melting Point: 217°C (422.6°F)

Critical Temperature: Not available.

Specific Gravity: 4.81 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 6700 mg/kg [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Passes through the placental barrier in animal. Excreted in maternal milk in human.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Selenium powder : UN2658 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Selenium Massachusetts RTK: Selenium TSCA 8(b) inventory: Selenium SARA 313 toxic chemical notification and release reporting: Selenium CERCLA: Hazardous substances.: Selenium

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).

DSCL (EEC): R36- Irritating to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 05/21/2013 12:00 PM

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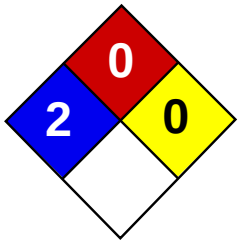

Health	2
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Nickel metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Nickel metal

Catalog Codes: SLN2296, SLN1342, SLN1954

CAS#: 7440-02-0

RTECS: QR5950000

TSCA: TSCA 8(b) inventory: Nickel metal

CI#: Not applicable.

Synonym: Nickel Metal shot; Nickel metal foil.

Chemical Name: Nickel

Chemical Formula: Ni

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Nickel metal	7440-02-0	100

Toxicological Data on Ingredients: Nickel metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer), of ingestion, of inhalation (lung sensitizer). CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to skin. The substance may be toxic to kidneys, lungs, liver, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Material in powder form, capable of creating a dust explosion. This material is flammable in powder form only.

Special Remarks on Explosion Hazards:
Material in powder form, capable of creating a dust explosion. Mixtures containing Potassium Perchlorate with Nickel & Titanium powders & infusorial earth can explode. Adding 2 or 3 drops of approximately 90% peroxyformic acid to powdered nickel will result in explosion. Powdered nickel reacts explosively upon contact with fused ammonium nitrate at temperatures below 200 deg. C.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Keep away from incompatibles such as oxidizing agents, combustible materials, metals, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 1 (mg/m3) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 0.5 (mg/m3) [United Kingdom (UK)] TWA: 1 (mg/m3) from OSHA (PEL) [United States] InhalationConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid. Lustrous solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 58.71 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: 2730°C (4946°F)

Melting Point: 1455°C (2651°F)

Critical Temperature: Not available.

Specific Gravity: Density: 8.908 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:

Insoluble in cold water, hot water. Insoluble in Ammonia. Soluble in dilute Nitric Acid. Slightly soluble in Hydrochloric Acid, Sulfuric Acid.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, combustible materials, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with strong acids, selenium, sulfur, wood and other combustibles, nickel nitrate, aluminum, aluminum trichloride, ethylene, p-dioxan, hydrogen, methanol, non-metals, oxidants, sulfur compounds, aniline, hydrogen sulfide, flammable solvents, hydrazine, and metal powders (especially zinc, aluminum, and magnesium), ammonium nitrate, nitryl fluoride, bromine pentafluoride, potassium perchlorate + titanium powder + indusorial earth.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. Causes damage to the following organs: skin. May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Other Toxic Effects on Humans:
Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of ingestion.

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose/Conc: LDL [Rat] - Route: Oral; Dose: 5000 mg/kg LDL [Guinea Pig] - Route: Oral; Dose: 5000 mg/kg

Special Remarks on Chronic Effects on Humans: May cause cancer based on animal test data

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Nickel dust and fume can irritate skin. Eyes: Nickel dust and fume can irritate eyes. Inhalation: Inhalation of dust or fume may cause respiratory tract irritation with non-productive cough, hoarseness, sore throat, headache, vertigo, weakness, chest pain, followed by delayed effects, including tachypnea, dyspnea, and ARDS. Death due to ARDS has been reported following inhalation of high concentrations of respirable metallic nickel dust. Later effects may include pulmonary edema and fibrosis. Ingestion: Metallic nickel is generally considered not to be acutely toxic if ingested. Ingestion may cause nausea, vomiting, abdominal , and diarrhea. Nickel may damage the kidneys(proteinuria), and may affect liver function. It may also affect behavior (somnolence), and cardiovascular system (increased cornary artery resistance, decreased myocardial contractility, myocardial damage, regional or general arteriolar or venus dilation). Chronic Potential Health Effects: Skin: May cause skin allergy. Nickel and nickel compounds are among the most common sensitizers inducing allergic contact dermatitis. Inhalation: Chronic inhalation nickel dust or fume can cause chronic hypertrophic rhinitis, sinusitis, nasal polyps, perforation of the nasal septum, chronic pulmonary irritation, fibrosis, pulmonary edema, pulmonary eosinophilia, Pneumoconiosis, allergies (asthma-like allergy), and cancer of the nasal sinus cavities, lungs, and possibly other organs. Future exposures can cause asthma attacks with shortness of breath, wheezing, cough, and/or chest tightness. Chronic inhalation of nickel dust or fume may also affect the liver (impaired liver function tests), and blood (changes in red blood cell count). Ingestion: Prolonged or repeated ingestion of nickel can be a source chronic urticaria and other signs of allergy.

Chronic ingestion of NIckel may also affect respiration and cause pneumoconiosis or fibrosis. Note: In the general population, sensitization occurs from exposure to nickel-containing coins, jewelry, watches,

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Nickel metal California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Nickel metal Connecticut hazardous material survey.: Nickel metal Illinois toxic substances disclosure to employee act: Nickel metal Illinois chemical safety act: Nickel metal New York release reporting list: Nickel metal Rhode Island RTK hazardous substances: Nickel metal Pennsylvania RTK: Nickel metal Michigan critical material: Nickel metal Massachusetts RTK: Nickel metal Massachusetts spill list: Nickel metal New Jersey: Nickel metal New Jersey spill list: Nickel metal Louisiana spill reporting: Nickel metal California Director's List of Hazardous Substances: Nickel metal TSCA 8(b) inventory: Nickel metal

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R40- Possible risks of irreversible effects. R43- May cause sensitization by skin contact. S22- Do not breathe dust. S36- Wear suitable protective clothing.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 05/21/2013 12:00 PM

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ALCONOX MSDS

Section 1 : MANUFACTURER INFORMATION

Product name: Alconox

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Manufacturer emergency phone number: 800-255-3924.
813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Supplier MSDS date: 2005/03/09

D.O.T. Classification: Not regulated.

Section 2 : HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155-30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE
497-19-8	7-13	SODIUM CARBONATE	NOT AVAILABLE	4090 MG/KG RAT ORAL 6600 MG/KG MOUSE ORAL	2300 MG/M3/2H RAT INHALATION 1200 MG/M3/2H MOUSE INHALATION
7722-88-5	10-30	TETRASODIUM PYROPHOSPHATE	5 MG/M3	4000 MG/KG RAT ORAL 2980 MG/KG MOUSE ORAL	NOT AVAILABLE
7758-29-4	10-30	SODIUM PHOSPHATE	NOT AVAILABLE	3120 MG/KG RAT ORAL 3100 MG/KG MOUSE ORAL >4640 MG/KG RABBIT DERMAL	NOT AVAILABLE

Section 2A : ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).
CAS# 497-19-8: LD50 4020 mg/kg - rat oral.
CAS# 7758-29-4: LD50 3100 mg/kg - rat oral.

Section 3 : PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Solid

Appearance & odor: Almost odourless.
White granular powder.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): Not applicable.

Vapour density (air=1): Not applicable.

By weight: Not available.

Evaporation rate (butyl acetate = 1): Not applicable.

Boiling point (°C): Not applicable.

Freezing point (°C): Not applicable.

pH: (1% aqueous solution).
9.5

Specific gravity @ 20 °C: (water = 1).
0.85 - 1.10

Solubility in water (%): 100 - > 10% w/w

Coefficient of water\oil dist.: Not available.

VOC: None

Section 4 : FIRE AND EXPLOSION HAZARD DATA

Flammability: Not flammable.

Conditions of flammability: Surrounding fire.

Extinguishing media: Carbon dioxide, dry chemical, foam.
Water
Water fog.

Special procedures: Self-contained breathing apparatus required.
Firefighters should wear the usual protective gear.

Auto-ignition temperature: Not available.

Flash point (°C), method: None

Lower flammability limit (% vol): Not applicable.

Upper flammability limit (% vol): Not applicable.

Not available.

Sensitivity to mechanical impact: Not applicable.

Hazardous combustion products: Oxides of carbon (COx).
Hydrocarbons.

Rate of burning: Not available.

Explosive power: None

Section 5 : REACTIVITY DATA

Chemical stability: Stable under normal conditions.

Conditions of instability: None known.

Hazardous polymerization: Will not occur.

Incompatible substances: Strong acids.
Strong oxidizers.

Hazardous decomposition products: See hazardous combustion products.

Section 6 : HEALTH HAZARD DATA

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of Acute Exposure

Eye contact: May cause irritation.

Skin contact: Prolonged contact may cause irritation.

Inhalation: Airborne particles may cause irritation.

Ingestion: May cause vomiting and diarrhea.
May cause abdominal pain.
May cause gastric distress.

Effects of chronic exposure: Contains an ingredient which may be corrosive.

LD50 of product, species & route: > 5000 mg/kg rat oral.

LC50 of product, species & route: Not available for mixture, see the ingredients section.

Exposure limit of material: Not available for mixture, see the ingredients section.

Sensitization to product: Not available.

Carcinogenic effects: Not listed as a carcinogen.

Reproductive effects: Not available.

Teratogenicity: Not available.

Mutagenicity: Not available.

Synergistic materials: Not available.

Medical conditions aggravated by exposure: Not available.

First Aid

Skin contact: Remove contaminated clothing.
Wash thoroughly with soap and water.
Seek medical attention if irritation persists.

Eye contact: Check for and remove contact lenses.
Flush eyes with clear, running water for 15 minutes while holding eyelids open: if irritation persists, consult a physician.

Inhalation: Remove victim to fresh air.
Seek medical attention if symptoms persist.

Ingestion: Dilute with two glasses of water.
Never give anything by mouth to an unconscious person.
Do not induce vomiting, seek immediate medical attention.

Section 7 : PRECAUTIONS FOR SAFE HANDLING AND USE

Leak / Spill: Contain the spill.
Recover uncontaminated material for re-use.
Wear appropriate protective equipment.
Contaminated material should be swept or shoveled into appropriate waste container for disposal.

Waste disposal: In accordance with municipal, provincial and federal regulations.

Handling procedures and equipment: Protect against physical damage.
Avoid breathing dust.
Wash thoroughly after handling.
Keep out of reach of children.
Avoid contact with skin, eyes and clothing.
Launder contaminated clothing prior to reuse.

Storage requirements: Keep containers closed when not in use.
Store away from strong acids or oxidizers.
Store in a cool, dry and well ventilated area.

Section 8 : CONTROL MEASURES

Precautionary Measures

Gloves / Type:

Neoprene or rubber gloves.

Respiratory / Type:

If exposure limit is exceeded, wear a NIOSH approved respirator.

Eye / Type:

Safety glasses with side-shields.

Footwear / Type: Safety shoes per local regulations.

Clothing / Type: As required to prevent skin contact.

Other / Type: Eye wash facility should be in close proximity.
Emergency shower should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.

Material Safety Data Sheet
Hexane

ACC# 10951

Section 1 - Chemical Product and Company Identification

MSDS Name: Hexane
Catalog Numbers: S80032, S800321, S800322MF, BP2615-100, BPH302-4EMW, H291-20, H291-200, H291-4, H291-500, H291FB-115, H291FB-19, H291FB-200, H291FB-50, H291RB-115, H291RB-19, H291RB-200, H291RB-50, H291RS-115, H291RS-19, H291RS-200, H291RS-28, H291RS-50, H291S-4, H291SS-115, H291SS-200, H291SS-28, H291SS-50, H292-1, H292-20, H292-200, H292-4, H292-500, H292200LC, H292FB-115, H292FB-19, H292FB-200, H292FB-50, H292J-4, H292J-500, H292POPB-50, H292POPB50, H292RB-115, H292RB-19, H292RB-200, H292RB-50, H292RS-19, H292RS-200, H292RS-50, H292RS115, H292RS200, H292RS28, H292RS50, H292SK-4, H292SS-115, H292SS-1350, H292SS-200, H292SS-28, H292SS-50, H300-4, H302-1, H302-4, H302-4LC, H302J-1, H302J-4, H302ME, H302N-119, H302N-219, H302N1-19, H302N2-19, H302POP-19, H302POP-50, H302RS-115, H302RS-19, H302RS-200, H302RS-28, H302RS-50, H302SK-1, H302SK-4, H302SS-115, H302SS-19, H302SS-200, H302SS-28, H302SS-50, H303-1, H303-4, H303-4LC, H303J-1, H303J-4, H303RS-115, H303RS-19, H303RS-200, H303RS-28, H303RS-50, H303SK-4, H303SS-115, H303SS-19, H303SS-200, H303SS-28, H303SS-50, H307-4, H307-4LC, H334-1, H334-4, N3-20, N3-200, N3S-4, NC9173152, NC9200225, NC9321642, NC9321646, NC9321654, NC9321656, NC9321658, NC9323196, NC9394242, NC9410668, NC9455032, NC9851780, O3386-20, S800322, S80032HPLC, S93257, XXH291SAMP4LI, XXH29218LI, XXH292SAMP4LI, XXH300SAMP4LI, XXH302SAMP4LI, XXH303SAMP4LI, XXH307SAMP4LI
Synonyms: n-Hexane; Hexyl hydride; Dipropyl; normal-Hexane; Hex.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-54-3	Hexane (contains a mixture of isomers)	100	203-777-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear colorless liquid.
Danger! Extremely flammable liquid and vapor. Vapor may cause flash fire. Breathing vapors may cause drowsiness and dizziness. Causes eye, skin, and respiratory tract irritation. May be harmful if absorbed through the skin. Aspiration hazard if swallowed. Can enter lungs and cause

damage. Possible risk of impaired fertility. Long-term exposure may cause damage to the nervous system of the extremities (the hands, arms, legs and feet). Dangerous for the environment.
Target Organs: Central nervous system, respiratory system, eyes, skin, peripheral nervous system, testes.

Potential Health Effects
Eye: Causes mild eye irritation.
Skin: Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Causes irritation with burning pain, itching, and redness. Absorbed through the skin. There have been no reports of skin sensitization in people occupationally exposed to n-hexane. Skin sensitization was not observed in a maximization test using 25 volunteers.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause central nervous system depression.
Inhalation: Causes respiratory tract irritation. Exposure produces central nervous system depression. Vapors may cause dizziness or suffocation. n-Hexane vapor concentrations can become so high that oxygen is displaced, especially in confined spaces.
Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. Chronic exposure may cause visual disturbances. Laboratory experiments have resulted in mutagenic effects. Peripheral neuropathy symptoms include: muscular weakness, paresthesia, numbing of the hands, feet, legs and arms, unsteadiness, and difficulty in walking and standing. Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances. Chronic exposure produces peripheral neuropathy.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively. For ingestion, the stomach sould be intubated, aspirated, and lavaged with a slurry of activated charcoal--protect the airway from aspiration of gastric contents. Monitor arterial blood gases in cases of severe aspiration.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. May accumulate static electrical charges, and may cause ignition of its own vapors. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may

travel to a source of ignition and spread fire.
Extinguishing Media: Use dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material. Water may be ineffective because it will not cool material below its flash point.
Flash Point: -7.6 to -15 deg
Autoignition Temperature: 225 deg C (437.00 deg F)
Explosion Limits, Lower:1.2 vol %
Upper: 7.7 vol %
NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use only non-sparking tools and equipment.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hexane (contains a mixture of isomers)	50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	50 ppm TWA; 180 mg/m3 TWA 1100 ppm IDLH	500 ppm TWA; 1800 mg/m3 TWA

OSHA Vacated PELs: Hexane (contains a mixture of isomers): 50 ppm TWA; 180 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear colorless
Odor: gasoline-like
pH: Not available.
Vapor Pressure: 151 mm Hg @ 25 deg C
Vapor Density: 2.97(Air = 1)
Evaporation Rate: Not available.
Viscosity: 0.31 mPas 20 deg C
Boiling Point: 62 - 69 deg C @ 760 mmHg
Freezing/Melting Point:-95 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:0.678
Molecular Formula:C6H14
Molecular Weight:86.18

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat, electrical sparks, confined spaces.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-54-3: MN9275000
LD50/LC50:
CAS# 110-54-3:
Draize test, rabbit, eye: 10 mg Mild;
Inhalation, mouse: LC50 = 150000 mg/m3/2H;
Inhalation, rat: LC50 = 48000 ppm/4H;
Inhalation, rat: LC50 = 627000 mg/m3/3M;
Oral, rat: LD50 = 25 gm/kg;

Carcinogenicity:
CAS# 110-54-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Occupational polyneuropathy has resulted from hexane exposures as low as 500 ppm, but the minimum levels of n-hexane that are neurotoxic in humans haven't been established. Nearly continuous exposure of animals at 250 ppm has caused neurotoxic effects.
Teratogenicity: No evidence of teratogenicity or embryotoxicity in anmial studies with hexane. Fetotoxicity has been observed in the presence of maternal toxicity.
Reproductive Effects: Severe testicular damage has been observed in rats exposed to hexane at concentrations which have produced other significant toxicity. Although subneurotoxic doses of its principle toxic metabolite, 2,5-hexanedione, can induce progressive testicular toxicity in rats, there have been no reports of human sterility or other reproductive toxicity associated with n-hexane exposures.
Mutagenicity: Positive results (chromosomal damage in the bone marrow cells) obtained for rats exposed by inhalation to n-hexane.
Neurotoxicity: n-Hexane is a mild irritant and CNS depressant in acute exposure, but its principal effects are damage to the sensory and motor peripheral nerves, particularly in chronic exposure.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. Estimated BCF values = 2.24 and 2.89. These values suggest that hexane will show low bioconcentration in aquatic organisms. Estimated Koc value = 4.11. This product will show slight soil mobility and is expected to rapidly volatilize from moist surface soils.
Environmental: Terrestrial: Volatilization and adsorption are expected to be the most important fate processes. Aquatic: Photolysis or hydrolysis are not expected to be important. Atmospheric: Expected to exist entirely in the vapor phase in ambient air, expected half life 2.8 days. Expected to biodegrade but not bioconcentrate.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	HEXANES	HEXANES
Hazard Class:	3	3
UN Number:	UN1208	UN1208
Packing Group:	II	II
Additional Info:		FLASHPOINT -22C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 110-54-3 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 110-54-3: immediate, delayed, fire.

Section 313

This material contains Hexane (contains a mixture of (CAS# 110-54-3, 100%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

CAS# 110-54-3 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 110-54-3 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN F N

Risk Phrases:

R 11 Highly flammable.
R 38 Irritating to skin.
R 48/20 Harmful : danger of serious damage to health by prolonged exposure through inhalation.
R 62 Possible risk of impaired fertility.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 65 Harmful: may cause lung damage if swallowed.

R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.
S 36/37 Wear suitable protective clothing and gloves.
S 9 Keep container in a well-ventilated place.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.
S 62 If swallowed, do not induce vomiting: seek medical advice immed iately and show this container or label.

WGK (Water Danger/Protection)

CAS# 110-54-3: 1

Canada - DSL/NDSL

CAS# 110-54-3 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 110-54-3 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/03/1999
Revision #12 Date: 1/15/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

MSDS Number: **H3880** * * * * * *Effective Date:* ***11/21/08*** * * * * * *Supercedes:* ***01/19/06***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

HYDROCHLORIC ACID, 33 - 40%

1. Product Identification

Synonyms: Muriatic acid; hydrogen chloride, aqueous
CAS No.: 7647-01-0
Molecular Weight: 36.46
Chemical Formula: HCl
Product Codes:
J.T. Baker: 5367, 5537, 5575, 5800, 5814, 5821, 5839, 5861, 5862, 5894, 5962, 5963, 5972, 5994, 6900, 7831, 9529, 9530, 9534, 9535, 9536, 9538, 9539, 9540, 9544, 9548, 9551
Mallinckrodt: 2062, 2515, 2612, 2624, 2626, 3861, 5583, 5587, H611, H613, H616, H987, H992, H999, V078, V628

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Hydrogen Chloride	7647-01-0	33 - 40%	Yes
Water	7732-18-5	60 - 67%	No

3. Hazards Identification

Emergency Overview

POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.
Ingestion:
Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.
Skin Contact:
Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

Eye Contact:
Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Chronic Exposure:
Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Extreme heat or contact with metals can release flammable hydrogen gas.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
If involved in a fire, use water spray. Neutralize with soda ash or slaked lime.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Hydrochloric acid:
- OSHA Permissible Exposure Limit (PEL):
5 ppm (Ceiling)
- ACGIH Threshold Limit Value (TLV):
2 ppm (Ceiling), A4 Not classifiable as a human carcinogen

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless, fuming liquid.
Odor:
Pungent odor of hydrogen chloride.
Solubility:
Infinite in water with slight evolution of heat.
Density:
1.18
pH:
For HCL solutions: 0.1 (1.0 N), 1.1 (0.1 N), 2.02 (0.01 N)
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
53C (127F) Azeotrope (20.2%) boils at 109C (228F)
Melting Point:
-74C (-101F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
190 @ 25C (77F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.
Hazardous Decomposition Products:
When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.
Conditions to Avoid:
Heat, direct sunlight.

11. Toxicological Information

Inhalation rat LC50: 3124 ppm/1H; oral rabbit LD50: 900 mg/kg (Hydrochloric acid concentrated); investigated as a tumorigen, mutagen, reproductive effector.

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--------\Cancer Lists\-----------------------------------------------------
                                        ---NTP Carcinogen---
Ingredient                              Known    Anticipated    IARC Category
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Hydrogen Chloride (7647-01-0)	No	No	3
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.
Environmental Toxicity:
This material is expected to be toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8
UN/NA: UN1789
Packing Group: II
Information reported for product/size: 475LB

International (Water, I.M.O.)

Proper Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8
UN/NA: UN1789
Packing Group: II
Information reported for product/size: 475LB

15. Regulatory Information

Risk and Safety Phrases:
Symbol: C
Risk: 34-37
Safety: (1/2-)26-45

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Hydrogen Chloride (7647-01-0)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Hydrogen Chloride (7647-01-0)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Hydrogen Chloride (7647-01-0)	5000	500*	Yes	No
Water (7732-18-5)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Hydrogen Chloride (7647-01-0)	5000	No	No
Water (7732-18-5)	No	No	No

```
Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  Yes
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Mixture / Liquid)
```

Australian Hazchem Code: 2R
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **1**
Label Hazard Warning:
POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Store in a tightly closed container.
Remove and wash contaminated clothing promptly.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **N3660** * * * * * *Effective Date:* ***11/18/09*** * * * * * *Supercedes:* ***11/07/08***

MSDS *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

NITRIC ACID, 50-70%

1. Product Identification

Synonyms: Aqua Fortis; Azotic Acid; Nitric Acid 50%; Nitric Acid 65%; nitric acid 69-70%
CAS No.: 7697-37-2
Molecular Weight: 63.01
Chemical Formula: HNO3
Product Codes:
J.T. Baker: 5371, 5796, 5801, 5826, 5856, 5876, 5896, 9597, 9598, 9600, 9601, 9602, 9603, 9604, 9606, 9607, 9608, 9610, 9616, 9617, 9670, 9761
Mallinckrodt: 1409, 2704, 2705, 2706, 2707, 2716, 6623, H862, H988, H993, H998, V077, V650

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Nitric Acid	7697-37-2	50 - 70%	Yes
Water	7732-18-5	30 - 50%	No

3. Hazards Identification

Emergency Overview

POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 4 - Extreme (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Nitric acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison.

Inhalation:
Corrosive! Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract.
Ingestion:
Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact:
Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.
Eye Contact:
Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Chronic Exposure:
Long-term exposure to concentrated vapors may cause erosion of teeth and lung damage. Long-term exposures seldom occur due to the corrosive properties of the acid.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

4. First Aid Measures

Immediate first aid treatment reduces the health effects of this substance.
Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.
Explosion:
Reacts explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc. Reacts with most metals to release hydrogen gas which can form explosive mixtures with air.
Fire Extinguishing Media:
Water spray may be used to keep fire exposed containers cool. Do not get water inside container.
Special Information:
Increases the flammability of combustible, organic and readily oxidizable materials. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):

2 ppm (TWA), 4 ppm (STEL)
-ACGIH Threshold Limit Value (TLV):
2 ppm (TWA); 4 ppm (STEL)

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless to yellowish liquid.
Odor:
Suffocating, acrid.
Solubility:
Infinitely soluble.
Specific Gravity:
1.41
pH:
1.0 (0.1M solution)
% Volatiles by volume @ 21C (70F):
100 (as water and acid)
Boiling Point:
122C (252F)
Melting Point:
-42C (-44F)
Vapor Density (Air=1):
2-3
Vapor Pressure (mm Hg):
48 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.
Hazardous Decomposition Products:
When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
A dangerously powerful oxidizing agent, concentrated nitric acid is incompatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, and combustible organics.
Conditions to Avoid:
Light and heat.

11. Toxicological Information

Nitric acid: Inhalation rat LC50: 244 ppm (NO2)/30M; Investigated as a mutagen, reproductive effector. Oral (human) LDLo: 430 mg/kg.

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--------\Cancer Lists\-----------------------------------------------------
                                        ---NTP Carcinogen---
Ingredient                              Known    Anticipated    IARC Category
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Nitric Acid (7697-37-2)                No          No            None
Water (7732-18-5)                      No          No            None
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12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II
Information reported for product/size: 6.5GL

International (Water, I.M.O.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II
Information reported for product/size: 6.5GL

International (Air, I.C.A.O.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II

Information reported for product/size:

15. Regulatory Information

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--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                    TSCA  EC   Japan  Australia
----------------------------------------------  ----  ---  -----  ---------
Nitric Acid (7697-37-2)                        Yes  Yes   Yes      Yes
Water (7732-18-5)                              Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                      --Canada--
Ingredient                                    Korea  DSL   NDSL  Phil.
----------------------------------------------  -----  ---   ----  -----
Nitric Acid (7697-37-2)                        Yes   Yes   No     Yes
Water (7732-18-5)                              Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Nitric Acid (7697-37-2)                   1000  1000    Yes        No
Water (7732-18-5)                         No    No      No         No

--------\Federal, State & International Regulations - Part 2\----------------
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Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Nitric Acid (7697-37-2)	1000	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: 2PE
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0** Other: **Oxidizer**
Label Hazard Warning:
POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep from contact with clothing and other combustible materials.
Do not store near combustible materials.
Store in a tightly closed container.
Remove and wash contaminated clothing promptly.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 14.
Disclaimer:
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

Material Safety Data Sheet
Methanol

ACC# 14280

Section 1 - Chemical Product and Company Identification

MSDS Name: Methanol
Catalog Numbers: AC167830000, AC167830025, AC167835000, AC176840000, AC176840010, AC176840025, AC176840250, AC176845000, AC177150000, AC177150010, AC177150025, AC177150050, AC177150051, AC177150250, AC177150251, AC268280000, AC268280010, AC268280025, AC325740000, AC325740010, AC325740025, AC326630000, AC326630010, AC326630025, AC326950000, AC326950010, AC326951000, AC326952500, AC327900000, AC327900010, AC364390000, AC364390010, AC364391000, AC364395000, AC413770000, AC413770040, AC413775000, AC423950000, AC423950010, AC423950040, AC423950200, AC423955000, AC610090040, AC610200040, AC610400010, AC61040019, AC61040050, AC61040050, AC610401000, AC61040115, AC61040115, AC61040200, AC61040200, AC610981000, AC611070040, AC615130025, S75162, S75163, S75959, S75965, S75965A, S75965HPLC, S93301, S93301A, S93302, S93302A, 19123467, A408-1, A408-4, A408-4LC, A408SK-4, A411-20, A411-4, A412-1, A412-20, A412-200, A412-200001, A412-200LC, A412-4, A412-4LC, A412-500, A412200001, A412CU-1300, A412FB-200, A412FB115, A412FB19, A412FB50, A412P-4, A412POP19, A412POPB-200, A412RB-200, A412RB-50, A412RB115, A412RS-200, A412RS115, A412RS19, A412RS28, A412RS50, A412SK-4, A412SS-115, A413-20, A413-200, A413-4, A413-500, A433F-1GAL, A433P-1GAL, A433P-4, A433P1GAL, A433S-20, A433S-200, A433S-4, A434-20, A450-4, A452-1, A452-4, A452-4LC, A452N1-19, A452N2-19, A452POP-200, A452POP50, A452RS-115, A452RS-19, A452RS-200, A452RS-28, A452RS-50, A452SK-1, A452SK-4, A452SS-19, A452SS-200, A452SS-28, A452SS-50, A453-1, A453-1LC, A453-4, A453-500, A454-1, A454-4, A454-4LC, A454RS-115, A454RS-200, A454RS-28, A454SK-4, A454SS-200, A454SS-28, A455-1, A456-1, A456-4, A457-4, A4574LC, A935-4, A935RB-200, A935RB200, A947-4, A947-4LC, A947POP-200, A947POP200, A947RS-115, A947RS-200, A947RS-28, A947SS-115, A947SS-200, A947SS-28, A947SS-50, BP1105-1, BP1105-4, BP1105SS19, BP1105SS28, HC4001GAL, NC9173853, NC9386568, NC9419923, NC9433033, NC9433739, NC9514454, NC9516446, NC9535777, NC9541632, NC9942270, SC95-1, SW2-1, TIA947-4, TIA947P-200, TIA947P-200L
Synonyms: Carbinol; Methyl alcohol; Methyl hydroxide; Monohydroxymethane; Wood alcohol; Wood naptha; Wood spirits; Columbian spirits; Methanol.
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
67-56-1	Methanol	> 99	200-659-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: APHA: 10 max clear liquid. Flash Point: 12 deg C.
Danger! Poison! May be fatal or cause blindness if swallowed. Vapor harmful. **Flammable liquid and vapor.** Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression. Cannot be made non-poisonous.
Target Organs: Eyes, nervous system, optic nerve.

Potential Health Effects

Eye: May cause painful sensitization to light. Methanol is a mild to moderate eye irritant. Inhalation, ingestion or skin absorption of methanol can cause significant disturbances in vision, including blindness.
Skin: Causes moderate skin irritation. May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Methanol can be absorbed through the skin, producing systemic effects that include visual disturbances.
Ingestion: May be fatal or cause blindness if swallowed. Aspiration hazard. Cannot be made non-poisonous. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause cardiopulmonary system effects.
Inhalation: Methanol is toxic and can very readily form extremely high vapor concentrations at room temperature. Inhalation is the most common route of occupational exposure. At first, methanol causes CNS depression with nausea, headache, vomiting, dizziness and incoordination. A time period with no obvious symptoms follows (typically 8-24 hrs). This latent period is followed by metabolic acidosis and severe visual effects which may include reduced reactivity and/or increased sensitivity to light, blurred, doubl and/or snowy vision, and blindness. Depending on the severity of exposure and the promptness of treatment, survivors may recover completely or may have permanent blindness, vision disturbances and/or nervous system effects.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Chronic exposure may cause effects similar to those of acute exposure. Methanol is only very slowly eliminated from the body. Because of this slow elimination, methanol should be regarded as a cumulative poison. Though a single exposure may cause no effect, daily exposures may result in the accumulation of a harmful amount. Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations that did not produce significant maternal toxicity.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Effects may be delayed.
Antidote: Ethanol may inhibit methanol metabolism.

Section 5 - Fire Fighting Measures

General Information: Ethanol may inhibit methanol metabolism. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Water may be ineffective. For large fires, use water spray, fog or alcohol-resistant foam. Do NOT use straight streams of water.
Flash Point: 12 deg C (53.60 deg F)
Autoignition Temperature: 455 deg C (851.00 deg F)
Explosion Limits, Lower:6.0 vol %
Upper: 31.00 vol %
NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid use in confined spaces.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methanol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA

OSHA Vacated PELs: Methanol: 200 ppm TWA; 260 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear butyl rubber gloves, apron, and/or clothing.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Appearance: clear, colorless - APHA: 10 max
Odor: alcohol-like - weak odor
pH: Not available.
Vapor Pressure: 128 mm Hg @ 20 deg C
Vapor Density: 1.11 (Air=1)
Evaporation Rate:5.2 (Ether=1)
Viscosity: 0.55 cP 20 deg C
Boiling Point: 64.7 deg C @ 760 mmHg
Freezing/Melting Point:-98 deg C
Decomposition Temperature: Not available.
Solubility: miscible
Specific Gravity/Density:.7910 g/cm3 @ 20°C

Molecular Formula:CH4O
Molecular Weight:32.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: High temperatures, ignition sources, confined spaces.
Incompatibilities with Other Materials: Oxidizing agents, reducing agents, acids, alkali metals, potassium, sodium, metals as powders (e.g. hafnium, raney nickel), acid anhydrides, acid chlorides, powdered aluminum, powdered magnesium.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, formaldehyde.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 67-56-1: PC1400000
LD50/LC50:
CAS# 67-56-1:
Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;
.
Human LDLo Oral: 143 mg/kg; Human LDLo Oral: 428 mg/kg; Human TCLo Inhalation; 300 ppm caused visual field changes & headache; Monkey LDLo Skin: 393 mg/kg. Methanol is significantly less toxic to most experimental animals than humans, because most animal species metabolize methanol differently. Non-primate species do not ordinarily show symptoms of metabolic acidosis or the visual effects which have been observed in primates and humans.
Carcinogenicity:
CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: There is no human information available. Methanol is considered to be a potential developmental hazard based on animal data. In animal experiments, methanol has caused fetotoxic or teratogenic effects without maternal toxicity.
Reproductive Effects: See actual entry in RTECS for complete information.
Mutagenicity: See actual entry in RTECS for complete information.
Neurotoxicity: ACGIH cites neuropathy, vision and CNS under TLV basis.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 29.4 g/L; 96 Hr; LC50 (unspecified)Fish: Goldfish: 250 ppm; 11 Hr; resulted in deathFish: Rainbow trout: 8000 mg/L; 48 Hr; LC50 (unspecified)Fish: Rainbow trout: LC50 = 13-68 mg/L; 96 Hr.; 12 degrees CFish: Fathead Minnow: LC50 = 29400 mg/L; 96 Hr.; 25 degrees C, pH 7.63Fish: Rainbow trout: LC50 = 8000 mg/L; 48 Hr.; UnspecifiedBacteria: Phytobacterium phosphoreum: EC50 = 51,000-320,000 mg/L; 30 minutes; Microtox test No data available.
Environmental: Dangerous to aquatic life in high concentrations. Aquatic toxicity rating: TLm 96>1000 ppm. May be dangerous if it enters water intakes. Methyl alcohol is expected to biodegrade in soil and water very rapidly. This

product will show high soil mobility and will be degraded from the ambient atmosphere by the reaction with photochemically produced hyroxyl radicals with an estimated half-life of 17.8 days. Bioconcentration factor for fish (golden ide) < 10. Based on a log Kow of -0.77, the BCF value for methanol can be estimated to be 0.2.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	METHANOL	METHANOL
Hazard Class:	3	3
UN Number:	UN1230	UN1230
Packing Group:	II	II
Additional Info:		FLASHPOINT 11 C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 67-56-1 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 67-56-1: immediate, fire.
Section 313
This material contains Methanol (CAS# 67-56-1, > 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T F

Risk Phrases:

R 11 Highly flammable.
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 36/37 Wear suitable protective clothing and gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 7 Keep container tightly closed.

WGK (Water Danger/Protection)

CAS# 67-56-1: 1

Canada - DSL/NDSL

CAS# 67-56-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/21/1999
Revision #16 Date: 6/29/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

LIQUINOX MSDS

Section 1 : MANUFACTURER INFORMATION

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Manufacturer emergency phone number: 800-255-3924.
813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Supplier MSDS date: 2005/02/24

D.O.T. Classification: Not regulated.

Section 2 : HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155-30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE

Section 3 : PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Liquid.

Appearance & odor: Odourless.
Pale yellow.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): @ 20°C (68°F).
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Vapour density (air=1): >1

Volatiles (%)

By volume: Not available.

Evaporation rate (butyl acetate = 1): < 1.

Boiling point (°C):	100 (212F)
Freezing point (°C):	Not available.
pH:	8.5
Specific gravity @ 20 °C:	(water = 1). 1.083
Solubility in water (%):	Complete.
Coefficient of water\oil dist.:	Not available.
VOC:	None

Section 4 : FIRE AND EXPLOSION HAZARD DATA

Flammability:	Not flammable.
Conditions of flammability:	Surrounding fire.
Extinguishing media:	Carbon dioxide, dry chemical, foam. Water Water fog.
Special procedures:	Self-contained breathing apparatus required. Firefighters should wear the usual protective gear. Use water spray to cool fire exposed containers.
Auto-ignition temperature:	Not available.
Flash point (°C), method:	None
Lower flammability limit (% vol):	Not applicable.
Upper flammability limit (% vol):	Not applicable.

Not available.

Sensitivity to mechanical impact:	Not available.
Hazardous combustion products:	Oxides of carbon (COx). Hydrocarbons.
Rate of burning:	Not available.
Explosive power:	Containers may rupture if exposed to heat or fire.

Section 5 : REACTIVITY DATA

Chemical stability:	Product is stable under normal handling and storage conditions.
Conditions of instability:	Extreme temperatures.
Hazardous polymerization:	Will not occur.
Incompatible substances:	Strong acids. Strong oxidizing agents.
Hazardous decomposition products:	See hazardous combustion products.

Section 6 : HEALTH HAZARD DATA

Route of entry: Skin contact, eye contact, inhalation and ingestion.

Effects of Acute Exposure

Eye contact: May cause irritation.

Skin contact: Prolonged and repeated contact may cause irritation.

Inhalation: May cause headache and nausea.

Ingestion: May cause vomiting and diarrhea.
May cause gastric distress.

Effects of chronic exposure: See effects of acute exposure.

LD50 of product, species & route: > 5000 mg/kg rat oral.

LC50 of product, species & route: Not available.

Exposure limit of material: Not available.

Sensitization to product: Not available.

Carcinogenic effects: Not listed as a carcinogen.

Reproductive effects: Not available.

Teratogenicity: Not available.

Mutagenicity: Not available.

Synergistic materials: Not available.

Medical conditions aggravated by exposure: Not available.

First Aid

Skin contact: Remove contaminated clothing.
Wash thoroughly with soap and water.
Seek medical attention if irritation persists.

Eye contact: Check for and remove contact lenses.
Flush eyes with clear, running water for 15 minutes while holding eyelids open: if irritation persists, consult a physician.

Inhalation: Remove victim to fresh air.
If irritation persists, seek medical attention.

Ingestion: Do not induce vomiting, seek medical attention.
Dilute with two glasses of water.
Never give anything by mouth to an unconscious person.

Section 7 : PRECAUTIONS FOR SAFE HANDLING AND USE

Leak / Spill: Contain the spill.
Prevent entry into drains, sewers, and other waterways.
Wear appropriate protective equipment.
Small amounts may be flushed to sewer with water.
Soak up with an absorbent material.
Place in appropriate container for disposal.
Notify the appropriate authorities as required.

Waste disposal: In accordance with local and federal regulations.

Handling procedures and equipment: Protect against physical damage.
Avoid breathing vapors/mists.
Wear personal protective equipment appropriate to task.

Wash thoroughly after handling.
Keep out of reach of children.
Avoid contact with skin, eyes and clothing.
Avoid extreme temperatures.
Launder contaminated clothing prior to reuse.

Storage requirements: Store away from incompatible materials.
Keep containers closed when not in use.

Section 8 : CONTROL MEASURES

Precautionary Measures

Gloves / Type:

Wear appropriate gloves.

Respiratory / Type: None required under normal use.

Eye / Type:

Safety glasses recommended.

Footwear / Type: Safety shoes per local regulations.

Clothing / Type: As required to prevent skin contact.

Other / Type: Eye wash facility should be in close proximity.
Emergency shower should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.

For the following RAE Part Numbers:

600-0001-000, 600-0002-000

600-0002-001, 600-0026-000

600-0027-000, 600-0069-000

AIR LIQUIDE™

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NONFLAMMABLE GAS MIXTURE

Containing One or More of the Following Components in a Nitrogen Balance Gas:
Oxygen 0-23.5%; Isobutylene, 0.0005-0.9%

SYNONYMS: Not Applicable
CHEMICAL FAMILY NAME: Not Applicable
FORMULA: Not Applicable
Document Number: 50054

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:	Calibration of Monitoring and Research Equipment
SUPPLIER/MANUFACTURER'S NAME:	CALGAZ
ADDRESS:	821 Chesapeake Drive Cambridge, MD 21613
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	1-410-228-6400
General MSDS Information:	1-713/868-0440
Fax on Demand:	1-800/231-1366

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL		NIOSH	OTHER
			TWA ppm	STEL ppm	TWA ppm	STEL ppm	IDLH ppm	ppm
Isobutylene	115-11-7	0.0005-0.9%	There are no specific exposure limits for Isobutylene.					
Oxygen	7782-44-7	0-23.5%	There are no specific exposure limits for Oxygen.					
Nitrogen	7727-37-9	Balance	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a colorless, odorless gas mixture. Releases of this gas mixture may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated. Isobutylene, a component of this gas mixture, may cause drowsiness and other central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. The chief health hazard associated with this gas mixture is when this gas mixture contains less than 19.5% Oxygen and is released in a small, poorly-ventilated area (i.e. an enclosed or confined space). Under this circumstance, an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The effects associated with various levels of oxygen are as follows:

CONCENTRATION OF OXYGEN	OBSERVED EFFECT
12-16% Oxygen:	Breathing and pulse rate increase, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea, vomiting, collapse, or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
See Section 8			

For Routine Industrial Use and Handling Applications

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. The most significant hazard associated with this gas mixture when it contains less than 19.5% oxygen is the potential for exposure to oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, unconsciousness, and death. The skin of a victim of over-exposure may have a blue color. Additionally, Isobutylene, a component of this gas mixture, may cause drowsiness or central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

CHRONIC: Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

TARGET ORGANS: ACUTE: Respiratory system, eyes. CHRONIC: Heart, cardiovascular system, central nervous system.

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn.

No unusual health effects are anticipated after exposure to this gas mixture, due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary; treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

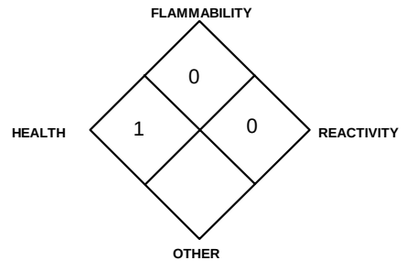
FIRE EXTINGUISHING MATERIALS: Non-flammable gas mixture. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small size and content of the cylinder, an accidental release of this gas mixture presents significantly less risk of an oxygen deficient environment and other safety hazards than a similar release from a larger cylinder. However, as with any chemical release, extreme caution must be used during emergency response procedures. In the event of a release in which the atmosphere is unknown, and in which other chemicals are potentially involved, evacuate immediate area. Such releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel.

Allow the gas mixture to dissipate. If necessary, monitor the surrounding area (and the original area of the release) for oxygen. Oxygen levels must be above 19.5% before non-emergency personnel are allowed to re-enter area.

If leaking incidentally from the cylinder, contact your supplier.

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to oxygen deficiency. Do not attempt to repair, adjust, or in any other way modify the cylinders containing this gas mixture. If there is a malfunction or another type of operational problem, contact nearest distributor immediately.

STORAGE AND HANDLING PRACTICES: Cylinders should be firmly secured to prevent falling or being knocked-over. Cylinders must be protected from the environment, and preferably kept at room temperature (approximately 21°C [70°F]). Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. These cylinders are not refillable. **WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.**

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: WARNING! Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Nitrous Oxide and Oxygen.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection when oxygen levels are below 19.5%, or during emergency response to a release of this gas mixture. During an emergency situation, before entering the area, check the concentration of Methane and Oxygen. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear leather gloves when handling cylinders. Chemically resistant gloves should be worn when using this gas mixture. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.072 lbs/ ft^3 (1.153 kg/m^3)

BOILING POINT: -195.8°C (-320.4°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.906
SOLUBILITY IN WATER vol/vol @ 32°F (0°C) and 1 atm: 0.023
EVAPORATION RATE (nBuAc = 1): Not applicable.
ODOR THRESHOLD: Not applicable.
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
FREEZING/MELTING POINT @ 10 psig: -210°C (-345.8°F)
pH: Not applicable.
MOLECULAR WEIGHT: 28.01
EXPANSION RATIO: Not applicable.
SPECIFIC VOLUME (ft^3/lb): 13.8
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for Oxygen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.083 lb/cu ft (1.326 kg/m^3)

FREEZING/MELTING POINT @ 10 psig: -218.8°C (-361.8°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 1.105
SOLUBILITY IN WATER vol/vol at 32°F (0°C) and 1 atm: 0.04.91
EVAPORATION RATE (nBuAc = 1): Not applicable.
ODOR THRESHOLD: Not applicable.
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
BOILING POINT: -183.0°C (-297.4°F)
pH: Not applicable.
MOLECULAR WEIGHT: 32.00
EXPANSION RATIO: Not applicable.
VOLUME (ft^3/lb): 12.1
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for the gas mixture.

APPEARANCE AND COLOR: This is a colorless, odorless gas mixture.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this gas mixture. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.
DECOMPOSITION PRODUCTS: The thermal decomposition products of Isobutylene include carbon oxides. The other components of this gas mixture do not decompose, per se, but can react with other compounds in the heat of a fire.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in the Nitrogen component of this gas mixture. Lithium reacts slowly with Nitrogen at ambient temperatures. The Isobutylene component of this gas mixture is also incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen difluoride, and nitrogen trifluoride).
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture:

ISOBUTYLENE:
LC_{50} (inhalation, rat) = 620,000 mg/kg/4 hours
LC_{50} (inhalation, mouse) = 415,000 mg/kg
NITROGEN:
There are no specific toxicology data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the environment.

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.
IRRITANCY OF PRODUCT: Contact with rapidly expanding gases can be irritating to exposed skin and eyes.
SENSITIZATION TO THE PRODUCT: The components of this gas mixture are not known to cause human skin or respiratory sensitization.
REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for the components in this gas mixture.
Embryotoxcity: No embryotoxic effects have been described for the components in this gas mixture.
Teratogenicity: No teratogenicity effects have been described for the components in this gas mixture.
Reproductive Toxicity: No reproductive toxicity effects have been described for the components in gas mixture.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.
BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The components of this gas mixture occur naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.

OXYGEN: Water Solubility = 1 volume Oxygen/32 volumes water at 20°C. Log K_{ow} = -0.65
NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C. 1.6 volumes Nitrogen/100 volumes water at 20°C.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on the effects of this gas mixture on plant and animal life.
EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of this gas mixture on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).
SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.
Note: DOT 39 Cylinders ship in a strong outer carton (overpack). Pertinent shipping information goes on the outside of the overpack. DOT 39 Cylinders do not have transportation information on the cylinder itself.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is considered as Dangerous Goods, per regulations of Transport Canada.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not Applicable
HAZARD LABEL: Class 2.2 (Non-Flammable Gas)
SPECIAL PROVISIONS: None
EXPLOSIVE LIMIT AND LIMITED QUANTITY INDEX: 0.12
ERAP INDEX: None
PASSENGER CARRYING SHIP INDEX: None
PASSENGER CARRYING ROAD VEHICLE OR PASSENGER CARRYING RAILWAY VEHICLE INDEX: 75
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
NOTE: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:
U.S. SARA REPORTING REQUIREMENTS: The components of this gas mixture are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.
U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this gas mixture. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.
U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.
U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.
OTHER U.S. FEDERAL REGULATIONS:

- No component of this gas mixture is subject to the requirements of CFR 29 1910.1000 (under the 1989 PELs).
- Isobutylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 pounds.
- The regulations of the Process Safety Management of Highly Hazardous Chemicals are not applicable (29 CFR 1910.119).
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82).

15. REGULATORY INFORMATION (continued)

- Nitrogen and Oxygen are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Isobutylene is listed under this regulation in Table 3 as Regulated Substances (Flammable Substances), in quantities of 10,000 lbs (4,554 kg) or greater.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: No.
California - Permissible Exposure Limits for Chemical Contaminants: Nitrogen.
Florida - Substance List: Oxygen, Isobutylene.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Oxygen, Isobutylene.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: No.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
Rhode Island - Hazardous Substance List: Oxygen, Nitrogen.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: : No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this gas mixture is on the California Proposition 65 lists.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS REGULATIONS: This gas mixture is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scrapping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1	*"Safe Handling of Compressed Gases in Containers"*
AV-1	*"Safe Handling and Storage of Compressed Gases"*
	"Handbook of Compressed Gases"

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
PO Box 3519, La Mesa, CA 91944-3519
619/670-0609
Fax on Demand: 1-800/231-1366

AIR LIQUIDE™

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of CALGAZ knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

MSDS Number: **P1949** * * * * * *Effective Date:* ***05/19/08*** * * * * * *Supercedes:* ***08/24/05***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

PHENOL, CRYSTALS

1. Product Identification

Synonyms: Carbolic acid; Phenic acid; Phenylic acid; Hydroxybenzene; Phenol, fused; Monohydroxybenzene; Phenol, solid
CAS No.: 108-95-2
Molecular Weight: 94.11
Chemical Formula: C6H5OH
Product Codes:
J.T. Baker: 2858, 2862, 4056
Mallinckrodt: 0028, 0052, 0273, 0605, H602

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Phenol	108-95-2	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. RAPIDLY ABSORBED THROUGH SKIN. CORROSIVE. CAUSES SEVERE BURNS TO EVERY AREA OF CONTACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. COMBUSTIBLE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 2 - Moderate
Reactivity Rating: 1 - Slight
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: White Stripe (Store Separately)

Potential Health Effects

The major hazard of phenol is its ability to penetrate the skin rapidly, particularly when liquid, causing severe injury which can be fatal. Phenol also has a strong corrosive effect on body tissue causing severe chemical burns. Due to its local anesthetizing properties, skin burns may be painless.

Inhalation:
Breathing vapor, dust or mist results in digestive disturbances (vomiting, difficulty in swallowing, diarrhea, loss of appetite). Will irritate, possibly burn respiratory tract. Other symptoms listed under ingestion may also occur.
Ingestion:

Poison. Symptoms may include burning pain in mouth and throat, abdominal pain, nausea, vomiting, headache, dizziness, muscular weakness, central nervous system effects, increase in heart rate, irregular breathing, coma, and possibly death. Acute exposure is also associated with kidney and liver damage. Ingestion of 1 gram has been lethal to humans.
Skin Contact:
Corrosive. Rapidly absorbed through the skin with systemic poisoning effects to follow. Discoloration and severe burns may occur, but may be disguised by a loss in pain sensation.
Eye Contact:
Corrosive. Eye burns with redness, pain, blurred vision may occur. May cause severe damage and blindness.
Chronic Exposure:
Repeated exposure may cause symptoms described for acute poisoning as well as eye and skin discoloration.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin, eye or central nervous system disorders, or impaired liver, kidney, or pulmonary function may be more susceptible to the effects of this substance.

4. First Aid Measures

IN CASE OF PHENOL POISONING, start first aid treatment immediately, then get medical attention. People administering first aid should take precautions to avoid contact with phenol. A phenol antidote kit (castor oil or other vegetable oil, polyethylene glycol 300) should be available in any phenol work area. Actions to be taken in case of phenol poisoning should be planned and practiced before beginning work with phenol. Castor oil and or polyethylene glycol can be given by a first responder before medical help arrives.
Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
If swallowed, immediately administer castor oil or other vegetable oil. Never give anything by mouth to an unconscious person. Be ready to induce vomiting at the advice of physician or poison control center. Castor oil (or vegetable oil) dosage should be between 15 and 30 cc. Get medical attention immediately.
Skin Contact:
In case of skin contact, immediately flush skin with large amounts of water while removing contaminated clothing and shoes. As soon as possible, repeatedly apply polyethylene glycol to affected area. Destroy contaminated clothing and shoes. Flush skin with water for at least 30 minutes. It is very important to avoid rubbing or wiping affected parts which would aggravate irritation and cause product dispersion. Continue treatment until the burned area changes color from white to pink. Expect that this can take a long period of time (20 minutes or more). The polyethylene glycol application should be done during transportation to the hospital. If polyethylene glycol is not available, flush with water for at least 30 minutes prior to going to hospital. Get medical attention immediately.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Treat ingestion with gastric lavage using 40% aqueous Bacto-Peptone, milk or water until phenolic odor is eliminated. Then give 15 to 50 cc castor or vegetable oil. Debride necrotic skin. Monitor vital signs, fluid status, electrolytes, BUN, renal and hepatic function, and electrocardiogram. Manage sedation, seizures, renal failure, and fluid electrolyte imbalances symptomatically as indicated.

5. Fire Fighting Measures

Fire:
Flash point: 79C (174F) CC
Autoignition temperature: 715C (1319F)
Flammable limits in air % by volume:
lel: 1.3; uel: 8.6
Combustible. Contact with strong oxidizers may cause fire.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated.
Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. Do not flush to the sewer. Dry lime or soda ash may be used on spill for neutralization. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge. All phenol workers should be properly trained on its hazards and the proper protective measures required. This training should also include emergency actions. All phenol operations should be enclosed to eliminate any potential exposure routes. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
Phenol:
-OSHA Permissible Exposure Limit (PEL):
5 ppm (TWA) (skin)

-ACGIH Threshold Limit Value (TLV):
5 ppm (TWA) (skin)
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge and dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Butyl rubber and neoprene are suitable materials for personal protective equipment.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless to light pink crystals.
Odor:
Sharp, medicinal, sweet, tarry.
Solubility:
1 g/15 ml of water; very soluble in alcohol.
Specific Gravity:
1.06 @ 20C/4C
pH:
ca. 6.0 Aqueous solution
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
182C (360F)
Melting Point:
43C (109F)
Vapor Density (Air=1):
3.2
Vapor Pressure (mm Hg):
0.4 @ 20C (68F)
Evaporation Rate (BuAc=1):
< 0.01

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Heat will contribute to instability.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition. Toxic gases and vapors may be released if involved in a fire.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Oxidizers, aluminum chloride and nitrobenzene, calcium hypochlorite, butadiene, halogens, formaldehyde, mineral oxidizing acids, isocyanates, sodium nitrite and many other materials. Hot liquid phenol will attack aluminum, magnesium, lead, and zinc metals.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 317 mg/Kg; skin rabbit LD50:630 mg/kg; inhalation rat LC50: 316 mg/m3; irritation data: skin rabbit, standard Draize, 500 mg/24H severe; eye rabbit, standard Draize 5 mg/30S rinse, mild. Investigated as a tumorigen, mutagen, reproductive effector.

```
--------\Cancer Lists\-----------------------------------------------------
                                     ---NTP Carcinogen---
Ingredient                           Known    Anticipated    IARC Category
------------------------------------ -----    -----------    -------------
Phenol (108-95-2)                     No          No              3
```

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into water, this material is not expected to evaporate significantly. When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day.
Environmental Toxicity:
This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: PHENOL, SOLID
Hazard Class: 6.1
UN/NA: UN1671
Packing Group: II
Information reported for product/size: 2.5KG

International (Water, I.M.O.)

Proper Shipping Name: PHENOL, SOLID
Hazard Class: 6.1
UN/NA: UN1671
Packing Group: II
Information reported for product/size: 2.5KG

15. Regulatory Information

```
--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                      TSCA  EC   Japan  Australia
----------------------------------------------  ----  ---  -----  ---------
Phenol (108-95-2)                                Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                        --Canada--
Ingredient                                      Korea  DSL   NDSL  Phil.
----------------------------------------------  -----  ---   ----  -----
Phenol (108-95-2)                                Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Phenol (108-95-2)                         1000  500*    Yes        No

--------\Federal, State & International Regulations - Part 2\----------------
                                                        -RCRA-    -TSCA-
Ingredient                                CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Phenol (108-95-2)                         1000       U188       No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: Yes Pressure: No
Reactivity: No          (Pure / Solid)
```

Australian Hazchem Code: 2X
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **4** Flammability: **2** Reactivity: **0**
Label Hazard Warning:
POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. RAPIDLY ABSORBED THROUGH SKIN. CORROSIVE. CAUSES SEVERE BURNS TO EVERY AREA OF CONTACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. COMBUSTIBLE.
Label Precautions:
Do not breathe dust.
Do not get in eyes, on skin, or on clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep away from heat, sparks and flame.
Label First Aid:
IN ALL CASES, GET MEDICAL ATTENTION IMMEDIATELY. KEEP A PHENOL ANTIDOTE KIT in area of product use or storage. Administer castor oil and/or polyethylene glycol per pre-planned directions. If swallowed, immediately administer castor oil or other vegetable oil. Never give anything by mouth to an unconscious person. In case of skin contact, immediately flush skin with large amounts of water while removing contaminated clothing and shoes. As soon as possible, repeatedly apply polyethylene glycol to affected area. Destroy contaminated clothing and shoes. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes while lifting lower and upper eyelids.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR

RELIANCE UPON THIS INFORMATION.
****

Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

Material Safety Data Sheet
Sodium Hydroxide Solution 0.01 N to 2 N

ACC# 40177

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium Hydroxide Solution 0.01 N to 2 N
Catalog Numbers: GILHYD20, SS272-1, SS272-20, SS274-1, SS274-4, SS276-1, SS276-20, SS276-20LC, SS276-4, SS278-1, SS282-1, SS282-4, SS284-1, SS284-4
Synonyms: Caustic soda; Lye.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	96-99.96	231-791-2
1310-73-2	Sodium hydroxide	0.04-4.0	215-185-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Clear liquid.
Danger! Eye contact may result in permanent eye damage. Causes burns by all exposure routes. Corrosive to aluminum.
Target Organs: Eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes eye burns. May cause lacrimation (tearing), blurred vision, and photophobia. May cause chemical conjunctivitis and corneal damage.
Skin: Causes skin burns. May cause deep, penetrating ulcers of the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.
Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause systemic effects.
Inhalation: Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma.

Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Contact with metals may evolve flammable hydrogen gas.
Extinguishing Media: Use water spray to cool fire-exposed containers. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Discard contaminated shoes. Use only with adequate ventilation. Do not breathe spray or mist.

Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from metals. Keep away from flammable liquids. Keep away from organic halogens.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Sodium hydroxide	2 mg/m3 Ceiling	10 mg/m3 IDLH	2 mg/m3 TWA

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Sodium hydroxide: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Clear
Odor: none reported
pH: Alkaline
Vapor Pressure: 14 mm Hg
Vapor Density: >1.0
Evaporation Rate: Not available.
Viscosity: >1 (ether=1)
Boiling Point: 100 deg C
Freezing/Melting Point:0 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density:1.0
Molecular Formula: NaOH
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Excess heat.
Incompatibilities with Other Materials: Metals, acids, aluminum, zinc, tin.
Hazardous Decomposition Products: Toxic fumes of sodium oxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 7732-18-5: ZC0110000
CAS# 1310-73-2: WB4900000
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
.

CAS# 1310-73-2:
Draize test, rabbit, eye: 400 ug Mild;
Draize test, rabbit, eye: 1% Severe;
Draize test, rabbit, eye: 50 ug/24H Severe;
Draize test, rabbit, eye: 1 mg/24H Severe;
Draize test, rabbit, skin: 500 mg/24H Severe;
.

Carcinogenicity:
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 1310-73-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SODIUM HYDROXIDE SOLUTION	No information available.
Hazard Class:	8	
UN Number:	UN1824	
Packing Group:	III	

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 1310-73-2 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 1310-73-2: immediate, reactive.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 1310-73-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 34 Causes burns.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.
CAS# 1310-73-2: 1

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 1310-73-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 1310-73-2 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997
Revision #10 Date: 11/06/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

MSDS Number: **H3880** * * * * * *Effective Date:* ***11/21/08*** * * * * * *Supercedes:* ***01/19/06***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

HYDROCHLORIC ACID, 33 - 40%

1. Product Identification

Synonyms: Muriatic acid; hydrogen chloride, aqueous
CAS No.: 7647-01-0
Molecular Weight: 36.46
Chemical Formula: HCl
Product Codes:
J.T. Baker: 5367, 5537, 5575, 5800, 5814, 5821, 5839, 5861, 5862, 5894, 5962, 5963, 5972, 5994, 6900, 7831, 9529, 9530, 9534, 9535, 9536, 9538, 9539, 9540, 9544, 9548, 9551
Mallinckrodt: 2062, 2515, 2612, 2624, 2626, 3861, 5583, 5587, H611, H613, H616, H987, H992, H999, V078, V628

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Hydrogen Chloride	7647-01-0	33 - 40%	Yes
Water	7732-18-5	60 - 67%	No

3. Hazards Identification

Emergency Overview

POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.
Ingestion:
Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.
Skin Contact:
Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

Eye Contact:
Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Chronic Exposure:
Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Extreme heat or contact with metals can release flammable hydrogen gas.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
If involved in a fire, use water spray. Neutralize with soda ash or slaked lime.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Hydrochloric acid:
- OSHA Permissible Exposure Limit (PEL):
5 ppm (Ceiling)
- ACGIH Threshold Limit Value (TLV):
2 ppm (Ceiling), A4 Not classifiable as a human carcinogen

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless, fuming liquid.
Odor:
Pungent odor of hydrogen chloride.
Solubility:
Infinite in water with slight evolution of heat.
Density:
1.18
pH:
For HCL solutions: 0.1 (1.0 N), 1.1 (0.1 N), 2.02 (0.01 N)
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
53C (127F) Azeotrope (20.2%) boils at 109C (228F)
Melting Point:
-74C (-101F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
190 @ 25C (77F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.
Hazardous Decomposition Products:
When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.
Conditions to Avoid:
Heat, direct sunlight.

11. Toxicological Information

Inhalation rat LC50: 3124 ppm/1H; oral rabbit LD50: 900 mg/kg (Hydrochloric acid concentrated); investigated as a tumorigen, mutagen, reproductive effector.

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--------\Cancer Lists\-----------------------------------------------------
                                        ---NTP Carcinogen---
Ingredient                              Known    Anticipated    IARC Category
------------------------------------    -----    -----------    -------------
```

Hydrogen Chloride (7647-01-0)	No	No	3
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.
Environmental Toxicity:
This material is expected to be toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8
UN/NA: UN1789
Packing Group: II
Information reported for product/size: 475LB

International (Water, I.M.O.)

Proper Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8
UN/NA: UN1789
Packing Group: II
Information reported for product/size: 475LB

15. Regulatory Information

Risk and Safety Phrases:
Symbol: C
Risk: 34-37
Safety: (1/2-)26-45

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Hydrogen Chloride (7647-01-0)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Hydrogen Chloride (7647-01-0)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Hydrogen Chloride (7647-01-0)	5000	500*	Yes	No
Water (7732-18-5)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Hydrogen Chloride (7647-01-0)	5000	No	No
Water (7732-18-5)	No	No	No

```
Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  Yes
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Mixture / Liquid)
```

Australian Hazchem Code: 2R
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **1**
Label Hazard Warning:
POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Store in a tightly closed container.
Remove and wash contaminated clothing promptly.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.
****
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **N3660** * * * * * *Effective Date:* ***11/18/09*** * * * * * *Supercedes:* ***11/07/08***

MSDS *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

NITRIC ACID, 50-70%

1. Product Identification

Synonyms: Aqua Fortis; Azotic Acid; Nitric Acid 50%; Nitric Acid 65%; nitric acid 69-70%
CAS No.: 7697-37-2
Molecular Weight: 63.01
Chemical Formula: HNO3
Product Codes:
J.T. Baker: 5371, 5796, 5801, 5826, 5856, 5876, 5896, 9597, 9598, 9600, 9601, 9602, 9603, 9604, 9606, 9607, 9608, 9610, 9616, 9617, 9670, 9761
Mallinckrodt: 1409, 2704, 2705, 2706, 2707, 2716, 6623, H862, H988, H993, H998, V077, V650

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Nitric Acid	7697-37-2	50 - 70%	Yes
Water	7732-18-5	30 - 50%	No

3. Hazards Identification

Emergency Overview

POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 4 - Extreme (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: White (Corrosive)

Potential Health Effects

Nitric acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison.

Inhalation:
Corrosive! Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract.
Ingestion:
Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact:
Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.
Eye Contact:
Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
Chronic Exposure:
Long-term exposure to concentrated vapors may cause erosion of teeth and lung damage. Long-term exposures seldom occur due to the corrosive properties of the acid.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

4. First Aid Measures

Immediate first aid treatment reduces the health effects of this substance.
Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.
Explosion:
Reacts explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc. Reacts with most metals to release hydrogen gas which can form explosive mixtures with air.
Fire Extinguishing Media:
Water spray may be used to keep fire exposed containers cool. Do not get water inside container.
Special Information:
Increases the flammability of combustible, organic and readily oxidizable materials. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.

7. Handling and Storage

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):

2 ppm (TWA), 4 ppm (STEL)
-ACGIH Threshold Limit Value (TLV):
2 ppm (TWA); 4 ppm (STEL)

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Colorless to yellowish liquid.
Odor:
Suffocating, acrid.
Solubility:
Infinitely soluble.
Specific Gravity:
1.41
pH:
1.0 (0.1M solution)
% Volatiles by volume @ 21C (70F):
100 (as water and acid)
Boiling Point:
122C (252F)
Melting Point:
-42C (-44F)
Vapor Density (Air=1):
2-3
Vapor Pressure (mm Hg):
48 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.
Hazardous Decomposition Products:
When heated to decomposition, emits toxic nitrogen oxides fumes and hydrogen nitrate. Will react with water or steam to produce heat and toxic and corrosive fumes.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
A dangerously powerful oxidizing agent, concentrated nitric acid is incompatible with most substances, especially strong bases, metallic powders, carbides, hydrogen sulfide, turpentine, and combustible organics.
Conditions to Avoid:
Light and heat.

11. Toxicological Information

Nitric acid: Inhalation rat LC50: 244 ppm (NO2)/30M; Investigated as a mutagen, reproductive effector. Oral (human) LDLo: 430 mg/kg.

```
--------\Cancer Lists\-----------------------------------------------------
                                        ---NTP Carcinogen---
Ingredient                              Known    Anticipated    IARC Category
------------------------------------    -----    -----------    -------------
```

```
Nitric Acid (7697-37-2)                No          No            None
Water (7732-18-5)                      No          No            None
```

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II
Information reported for product/size: 6.5GL

International (Water, I.M.O.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II
Information reported for product/size: 6.5GL

International (Air, I.C.A.O.)

Proper Shipping Name: NITRIC ACID
Hazard Class: 8, 5.1
UN/NA: UN2031
Packing Group: II

Information reported for product/size:

15. Regulatory Information

```
--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                    TSCA  EC   Japan  Australia
----------------------------------------------  ----  ---  -----  ---------
Nitric Acid (7697-37-2)                        Yes  Yes   Yes      Yes
Water (7732-18-5)                              Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                      --Canada--
Ingredient                                    Korea  DSL   NDSL  Phil.
----------------------------------------------  -----  ---   ----  -----
Nitric Acid (7697-37-2)                        Yes   Yes   No     Yes
Water (7732-18-5)                              Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Nitric Acid (7697-37-2)                   1000  1000    Yes        No
Water (7732-18-5)                         No    No      No         No

--------\Federal, State & International Regulations - Part 2\----------------
```

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Nitric Acid (7697-37-2)	1000	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: 2PE
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0** Other: **Oxidizer**
Label Hazard Warning:
POISON! DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep from contact with clothing and other combustible materials.
Do not store near combustible materials.
Store in a tightly closed container.
Remove and wash contaminated clothing promptly.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 14.
Disclaimer:
****
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

ISO9001 - 2000 certified

Material Safety Data Sheet

Sulfuric Acid Solutions 0.03-93%, Sulfuric Acid Solutions 0.01N - 12N

Section 1 - Chemical Product and Company Identification

MSDS Name:

Sulfuric Acid Solutions 0.03-93%, Sulfuric Acid Solutions 0.01N - 12N

Catalog Numbers:

LC25570, LC25580, LC25590, LC25600, LC25605, LC25607, LC25610, LC25620, LC25640, LC25645, LC25650, LC25655, LC25660, LC25670, LC25675, LC25680, LC25685, LC25700, LC25720, LC25730, LC25740, LC25770, LC25790, LC25800, LC25810, LC25830, LC25840, LC25850, LC25870, LC25880

Synonyms:

Company Identification:

LabChem, Inc.
200 William Pitt Way
Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	balance
7664-93-9	Sulfuric acid	0.03-93

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless
Danger! Corrosive. Causes eye and skin burns. Causes digestive and respiratory tract burns.
Target Organs: None.

Potential Health Effects

Eye:

Causes severe eye burns. Eye contact can result in blindness; exposure to mist leads to watering, irritation.

Skin:

Skin contact may result in severe burns, blistering, pain.

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Ingestion:

May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. Vomiting and diarrhea of dark blood may occur; asphyxia from throat swelling. Stomach and esophagus may become perforated.

Inhalation:

May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. At 5mg/M3 concentrations, nose and throat irritation occurs, with headache, cough, increased respiratory rate, impairment of lung to ventilate.

Chronic:

Delayed symptoms include tight chest, fluid in lungs, cyanosis (blue color), hypotension, bronchitis or emphysema. tracheobronchitis, dental erosion/discoloration, pneumonia, gastrointestinal disturbances may occur. Skin irritation/dermatitis, conjunctivitis and lacrimation of the eye can occur.

Section 4 - First Aid Measures

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until chemical is gone. Get medical aid at once.

Skin:

Get medical aid at once. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical aid at once. Give one ounce (30ml) of milk of magnesia. Give conscious victim large quantities of water to dilute acid.

Inhalation:

Get medical aid at once. Move victim to fresh air immediately. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Contact with metals may evolve flammable hydrogen gas. Avoid breathing toxic and corrosive vapors - keep upwind.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature:

No information found.

Flash Point:

No information found.

NFPA Rating:

CAS# 7732-18-5: Not published.
CAS# 7664-93-9: health - 3; flammability - 0; reactivity - 2.

Explosion Limits:

Lower: Upper:

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Sulfuric Acid Solutions 0.03-93%, Sulfuric Acid Solutions 0.01N - 12N

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

May be neutralized with slaked lime, limestone, or sodium bicarbonate to a pH 7. Place in labeled plastic containers for disposal, wash area down with water.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use with adequate ventilation.

Storage:

Do not store near alkaline substances. Store in labeled non-reactive containers (glass, plastic) protected from heat and incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sulfuric acid	1 mg/m3 TWA;3 mg/m3 STEL	1 mg/m3 TWA	1 mg/m3 TWA;

OSHA Vacated PELs

Sulfuric acid: 1 mg/m3 TWA

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Provide an eye-wash fountain in the immediate work area. Do not wear contact lenses when working with chemicals.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear acid protective clothing and gloves.

Respirators:

50mg/M3 -GMAGHiEP/HiEPF/SAF/SCBAF.
100mg/M3 - SAF:PD,PP,CF.
Escape - GMAGHiEP/SCBA. Firefighting - SCBAF:PD,PP.
(Respirator Codes: (NIOSH) PUblication No. 78-210)

Material Safety Data Sheet

Sulfuric Acid Solutions 0.03-93%, Sulfuric Acid Solutions 0.01N - 12N

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	colorless
Odor:	odorless
pH:	acidic
Vapor Pressure:	No information found.
Vapor Density:	No information found.
Evaporation Rate:	<ether
Viscosity:	No information found.
Boiling Point:	No information found.
Freezing/Melting Point:	No information found.
Decomposition Temperature:	No information found.
Solubility in water:	Soluble.
Specific Gravity/Density:	1.0 - 1.7
Molecular Formula:	No information found.
Molecular Weight	No information found.

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, excess heat, combustible materials, organic materials, oxidizers, amines, bases.

Incompatibilities with Other Materials

Explosive or violent reactions with acetone cyanohydrin, acetone and nitric acid or potassium dichromate, acrylonitrile, alcohols, hydrogen peroxide, allyl chloride, bromates and metals, bromine pentafluoride, carbides, all chlorates, chlorine trifluoride, cuprous nitride, ethylene cyanohydrin, fulminates, indane and nitric acid, iron, mercuric nitride, nitric acid and glycerides, p-nitrotoluene, pentasilver trihydroxydiaminophosphate, perchlorates, phosphorus isocyanate picrates, sliver permanganate, sodium, sodium carbonate, toluene and nitric acid. Dangerous temperatures and pressures occur with other substances, especially organic combinations. Explosive hydrogen gas is evolved from contact with steel, other metals.

Hazardous Decomposition Products

Oxides of sulfur, hydrogen gas.

Hazardous Polymerization

Has not been reported.

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000.
CAS# 7664-93-9: WS5600000.

Material Safety Data Sheet

Sulfuric Acid Solutions 0.03-93%, Sulfuric Acid Solutions 0.01N - 12N

LD50/LC50:

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg.
CAS# 7664-93-9:
Inhalation, mouse: LC50 =320 mg/m3/2H
Inhalation, rat: LC50 =510 mg/m3/2H
Oral, rat: LD50 = 2140 mg/kg.

Carcinogenicity:

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 7664-93-9
ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)
California: Not listed.
NIOSH: Not listed.
NTP: Not listed.
OSHA: Select carcinogen
IARC: Group 1 carcinogen

Epidemiology:

Teratogenicity:

Reproductive:

Mutagenicity

Neurotoxicity

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

	> 51% W/W	0.5% to 51% W/W	< 0.5% W/W
Shipping Name:	Sulfuric acid	Sulfuric Acid	Not regulated.
Hazard Class:	8	8	
UN Number:	UN1830	UN2796	
Packing Group:	PG II	PG II	

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 7664-93-9 is listed on the TSCA Inventory.

Ascent Battery Supply, LLC
925 Walnut Ridge Drive
Hartland, Wisconsin 53029

Material Safety Data Sheet — Nickel Cadmium

The information and recommendations below are believed to be accurate at the date of preparation. Ascent Battery makes no warranty of merchantability or any other warranty, express or implied, with respect to such information and we assume no liability resulting from its use. This MSDS sheet provides guidelines for safe use and handling of the product. It does not and cannot advise all possible situations. Your specific use of this product should be evaluated to determine if additional precautions must be taken.

Distributed By:	Ascent Battery Supply, LLC	**Emergency Number**	INFOTRAC (800) 535-5053
Address	925 Walnut Ridge Drive Hartland, Wisconsin 53029	**Overseas Emergency Number**	INFOTRAC (800) 535-5053
Date Prepared	1/23/03		

SECTION 1 – IDENTITY

Product Name	Nickel Cadmium Battery
Common Synonyms	NiCd
DOT Description	Dry Battery
Chemical Name	Nickel Cadmium; Secondary Battery Battery

SECTION 2 – HAZARDOUS INGREDIENTS

Chemical Name	CAS No.	Percentage %
Cadmium	7440-43-9	11 - 26
Cadmium Hydroxide	21041-95-2	11 - 26
Nickel (Powder)	7440-02-0	8 - 17
Nickel Hydroxide	12054-48-7	5 - 12
Potassium Hydroxide	1310-58-3	< 3
Nylon	N/A	< 2
Steel	N/A	12 - 13
Other	N/A	< 1

SECTION 3 – PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point	NA	**Melting Point**	NA
Vapor Pressure	NA	**Vapor Density**	NA
Specific Gravity	NA	**Percent Volatile By Volume**	NA
Solubility in Water	NA	**Reactivity in Water**	NA
Appearance and Odor	Geo-metric, solid object	**Evaporation Rate**	NA
Flash Point	NA	**Flammable Limits in Air % by Volume**	NA
Extinguisher Media	Use Water, foam or dry powder	**Auto-Ignition Temperature**	NA
Special Fire Fighting Procedures	Wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.		
Unusual Fire & Explosion	Cells may rupture when exposed to high heat resulting in release of corrosive materials.		