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December 1, 2016

Mr. Wes March
Environmental Specialist
Missouri Department of Natural Resources
Brownfields/Voluntary Cleanup Section
Jefferson City, Missouri 65102

Subject: **Phase I Environmental Site Assessment**
Holden Business Park Site, Holden, Missouri
Missouri Environmental Assessment Services Contract, Contract No. C312021002
Vendor No. 48120656000

Dear Mr. March:

Seagull Environmental Technologies, Inc. (Seagull) is submitting the enclosed Phase I Environmental Site Assessment (ESA) report for the Holden Business Park site at 500 West McKissock Street in Holden, Missouri. The goal of the Phase I ESA was to identify recognized environmental conditions associated with the site. This report was completed in accordance with industry standard practice for Phase I Environmental Site Assessments.

If you have any questions or comments, please contact the project manager at (720) 666-3803.

Sincerely,

Ryan M. Lunt

Ryan M. Lunt, CHMM
Project Manager

Hieu Q. Vu, PE
Project Director

PHASE I ENVIRONMENTAL SITE ASSESSMENT

HOLDEN BUSINESS PARK SITE, HOLDEN, MISSOURI

Missouri Environmental Assessment Services Contract

Contract No. C312021002
Vendor No. 48120656000

Prepared For:

Missouri Department of Natural Resources – Brownfields/Voluntary Cleanup Section
P.O. Box 176
Jefferson City, Missouri 65102

December 1, 2016

Prepared By:

Seagull Environmental Technologies, Inc.
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Gladstone, Missouri 64118

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EXECUTIVE SUMMARY

Seagull Environmental Technologies, Inc. (Seagull) was tasked by the Missouri Department of Natural Resources (MDNR) – Brownfields/Voluntary Cleanup Program (BVCP) to conduct a Phase I Environmental Site Assessment (ESA) of the Holden Business Park site at 500 West McKissock Street in Holden, Missouri. The Holden Business Park site will hereafter be referred to as the "subject property" or "site". The subject property encompasses approximately 26 acres and is currently vacant land that contains a hoop building, storage shed, and gravel parking lot. The subject property was donated to, and is currently owned by, the City of Holden, Missouri. The subject property is zoned and marketed for commercial business use. Future development plans for the site are for use as a business park. The City of Holden requested this Phase I ESA for the subject property to help the City of Holden comply with requirements associated with application for the Missouri Certified Site Program. A Certified Site requires a high level of due diligence and can initiate development by significantly reducing the risk(s) for potential buyers. Seagull conducted this Phase I ESA in accordance with the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, American Society for Testing and Materials designation E 1527-13, and otherwise in compliance with Environmental Protection Agency (EPA) "All Appropriate Inquiries" Rule ("AAI Rule") (40 *Code of Federal Regulations* [CFR] Part 312). The purpose of the Phase I ESA is to identify recognized environmental conditions (REC) in association with the subject property, and to identify the nature of contamination and the risks posed by the contamination, if present.

The site is bounded to the north by a railroad line with residential properties and undeveloped land beyond, to the east by a city maintenance facility and residential and commercial properties, to the south by Highway 58 with residential and commercial properties beyond, and to the west by residential properties and undeveloped land with the City of Holden Wastewater Treatment Facility beyond. The following significant findings were identified from review of historic records, environmental database review, site reconnaissance, or interviews:

- During site reconnaissance activities, Petroleum products (gasoline, oil, and lubricants) were observed at the City of Holden Street Department facility adjacent to the subject property (to the east, roughly 20 feet) in multiple 55-gallon drums and various containers. Additionally, stained soil and gravel were observed in multiple places where the drums of containerized material were stored. Based on the identified petroleum products, along with the stained soil and gravel, poses a REC to the subject property.

- On November 16, 2016, Seagull contacted Ms. Jamie Bernard-Drakey of EPA's Region 7 Superfund Division to discuss the Rose Chemical site (EPA ID MOD980633069). In 1982, Rose Chemical began operations as a polychlorinated biphenyl (PCBs) processing facility on the subject property. Prior to the company ceasing operations in February 1986, Rose Chemicals received approximately 23 million pounds of PCB materials. Approximately 14 to 16 million pounds of these PCB materials were abandoned at this facility. On November 12, 1986, EPA Region 7 issued an Administrative Order on Consent (AOC) to the Rose Chemicals Steering Committee (RCSC). RCSC is the committee that containerized and secured PCB solids and liquids and completed a waste inventory for the subject property. A second AOC was issued November 19, 1987, ordering RCSC to remove the containerized contaminants from the subject property and to complete a Remedial Investigation/Feasibility Study (RI/FS). The PCB waste was transported and disposed of in a permitted chemical waste landfill or at an incineration facility. The RI/FS identified PCBs in surface and subsurface soils, pond sediments, and sediments of East Pin Oak Creek and an unnamed tributary to East Pin Oak Creek. Based on this information, the EPA issued a Record of Decision (ROD) on March 6, 1992. The ROD determined the remedial actions to be taken at the site which included: (1) The removal and off-site disposal of sediments containing PCBs in excess of 0.18 milligrams per kilograms (mg/kg) from the creek; (2) Excavation, removal, and off-site disposal/treatment of soils containing PCBs in excess of 10 mg/kg; (3)Dismantling and offsite disposal/treatment of the buildings; (4) Backfilling all excavated areas with clean soil, regrading, and seeding; (5) Monitoring of the subject property's groundwater; (6) A restriction on the property's chain of title prohibiting the use of groundwater; and (7) Treatment of any other contaminated materials. On September 3, 1992, EPA Region 7 issued a third AOC directing RCSC to perform a Remedial Design (RD) and to implement the RD by performing a Remedial Action (RA). During the RA, 31,419 tons of contaminated soil was removed from the site. The RA was completed in July 1995, and groundwater monitoring ceased in mid-1999. Lastly, a deed restriction prohibiting the drilling and/or installation of groundwater wells has been placed on the subject property. As a result, the Rose Chemical site poses a historical recognized environmental conditions (HREC) to the subject property.

- The subject property was included in 11 databases: Comprehensive Environmental Response, Compensation, and Liability Information System – No Further Remedial Action Planned (CERCLIS-NFRAP); U.S. Engineering Controls (US ENG CONTROLS); U.S. Institutional Controls (US INST CONTROLS); Resource Conservation and Recovery Act – Non-Generators/No Longer Regulated (RCRA-NonGen/NLR); Records of Decision (ROD); Potentially Responsible Parties (PRP); Integrated Compliance Information System (ICIS); Facility Index System/Facility Registry System (FINDS); Facility and Manifest Data (NY MANIFEST); Site Management and Reporting System (MO SMARS); and Enforcement & Compliance History Information (ECHO). These listing are based on the Rose Chemical site that was previously on the subject property. The Rose Chemical site poses a HREC to the subject property.

- One Historical Cleaners site (Suds Shoppe-401 W. Mckissock Street) was identified within the search radius. According to the database, Suds Shoppe was in business until 2003. Additionally, review of the 2003 city directory listed and identified Suds Shoppe (drycleaners) at 401 McKissock Street. Based on distance, the topographic gradient, and estimated groundwater flow direction, this site poses a REC to the subject property.

- Review of the 1907 and 1914 Sanborn® maps shows a metal polish manufacturing company east of the subject property along McKissock Street. Based on distance, the topographic gradient, and estimated groundwater flow direction, the metal polish manufacturing company poses a REC to the subject property.

Based on the identification of the RECs and HREC, Seagull provides the following recommendations:

- A Phase II ESA should be performed along the eastern boundary of the subject property. Soil and groundwater samples should be collected and analyzed for contaminants commonly associated with drycleaner, petroleum products, and metals polish manufacturing, including volatile organic compounds, total petroleum hydrocarbons, and metals.
- Future use of the subject property should also include proper planning so there is no drilling or installation of groundwater wells.

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1.0 INTRODUCTION

Seagull Environmental Technologies, Inc. (Seagull) was tasked by the Missouri Department of Natural Resources (MDNR) – Brownfields/Voluntary Cleanup Program (BVCP) to conduct a Phase I Environmental Site Assessment (ESA) of the Holden Business Park site at 500 West McKissock Street in Holden, Missouri. The Holden Business Park site will hereafter be referred to as the "subject property" or "site." The subject property encompasses approximately 26 acres and is currently vacant land that contains a hoop building, storage shed, and gravel parking lot. The subject property was donated to, and is currently owned by, the City of Holden, Missouri. The subject property is zoned and marketed for commercial business use. Future development plans for the site are for use as a business park. The City of Holden requested this Phase I ESA for the subject property to help the City of Holden comply with the requirements associated with application for the Missouri Certified Site Program. A Certified Site requires a high level of due diligence and can initiate development by significantly reducing the risk(s) for potential buyers.

Seagull conducted this Phase I ESA in accordance with the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, American Society for Testing and Materials (ASTM) designation E 1527-13, and otherwise in compliance with EPA's "All Appropriate Inquiries" Rule (AAI Rule) (40 Code of Federal Regulations [CFR] Part 312). For the purpose of this Phase I ESA, the *users* are defined the Johnson County Economic Development Corporation (developer and marketer on behalf of the City of Holden), and MDNR (Section 3.2.98, ASTM 2013). MDNR tasked Seagull to conduct the Phase I ESA to identify recognized environmental conditions (REC) associated with the site and identify the nature of contamination and the risks posed by the contamination, if present.

1.1 PURPOSE

The goal of this Phase I ESA is to identify RECs at the subject property. The term REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property; (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not RECs (Section 1.1.1 E 1527-13, ASTM 2013). De minimis conditions are those that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

A controlled recognized environmental condition (CREC) is a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (Section 3.2.18 E 1527-13, ASTM 2013).

A historical recognized environmental condition (HREC) is a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (Section 3.2.42 E 1527-13, ASTM 2013).

1.2 SCOPE OF WORK

MDNR's scope of work (SOW), based on ASTM designation E 1527-13, was to identify RECs at the site. Phase I ESAs are typically conducted in a four-phase process, including: (1) records review; (2) site reconnaissance; (3) interviews with current and previous owners and occupants of the site, adjacent property owners and occupants, and local government agencies; and (4) preparation of a report. Section 11.0 lists sources referenced during this investigation.

Any items listed in the ASTM standard that the report does not specifically identify as present can be assumed not present within the site or within such distance to the site as to be of potential concern to the site. Any item mentioned but not specifically identified as a REC can be assumed not a REC.

1.3 SIGNIFICANT ASSUMPTIONS

The following are beyond the scope of this evaluation: asbestos and lead-based paint inspections, sampling and analysis for radon and lead in drinking water (related to plumbing systems); evaluations of air quality (unrelated to releases of hazardous substances or petroleum products into the environment), regulatory compliance, industrial hygiene, and noise impacts; and identification of geological or geotechnical hazards.

1.4 DEVIATIONS

For this Phase I ESA, one deviation was noted from ASTM E 1527-13. That deviation is discussed in Section 7.1 of this report and also contains a data gap analysis concerning that deviation.

1.5 LIMITATIONS AND EXCEPTIONS

This report was based partially on information supplied to Seagull from outside sources and on other information available in the public domain. The conclusions and opinions reported herein are based on the information Seagull obtained in compiling the report. This information is on file at Seagull's office in Gladstone, Missouri. Seagull makes no warranty as to the accuracy of statements made by others which may be contained in the report, nor are any other warranties or guarantees, expressed or implied, included or intended by the report except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professional consultants or firms performing the same or similar services. Because the facts forming the basis for the report are subject to professional interpretation, differing conclusions could be reached. Seagull does not assume responsibility for the discovery and elimination of hazards that could possibly cause accidents, injuries, or damage. Compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of the client's obligations under local, state, or federal laws or any modifications or changes to such laws. None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature, but shall be a representation of findings of fact from records examined.

1.6 SPECIAL TERMS AND CONDITIONS

There were no special terms or conditions for the Phase I ESA.

1.7 STATEMENT OF USER RELIANCE

This report was prepared for the use and reliance of the Johnson County Economic Development Corporation (developer and marketer on behalf of City of Holden). Seagull is not required to verify independently the information provided to it by the users or gathered throughout the course of this Phase I ESA. For this Phase I ESA, Seagull may rely on information provided unless actual knowledge is possessed that certain information is incorrect based on information obtained during the Phase I ESA or otherwise actually known by the person preparing this report.

2.0 SITE DESCRIPTION

This section provides a brief description of the site and the physical setting based on information obtained from MDNR – BVCP and a records review conducted post-reconnaissance. Observations during the site reconnaissance regarding current land use of the site and adjoining properties are described in Section 4.0.

2.1 SITE LOCATION

The subject property's address is 500 West McKissock Street in Holden, Johnson County, Missouri. The subject property encompasses approximately 26 acres and is currently vacant land that contains a hoop building, storage shed, and gravel parking lot. The site is included on the Holden, Missouri, U.S. Geological Survey (USGS) 7.5- minute topographic series map (USGS 1980) (see Appendix A, Figure 1). The site is located in Section 10, Township 45 North, Range 28 West. Coordinates for the approximate center of the site are 38.720042 degrees north latitude and 93.996251 degrees west longitude. There is currently no parcel identification number for the subject property. Appendix B contains property information provided by the Johnson County Economic Development Corporation.

2.2 SITE VICINITY GENERAL CHARACTERISTICS

The subject property is located in Holden, Missouri. The surrounding area is primarily occupied by residential properties and commercial businesses. The site is bounded to the north by a railroad line with residential properties and undeveloped land beyond, to the east by a city maintenance facility and residential and commercial properties, to the south by Highway 58 with residential and commercial properties beyond, and to the west by residential properties and undeveloped land with the City of Holden Wastewater Treatment Facility beyond.

2.3 CURRENT AND PAST USES OF THE SITE

Historical documents indicate the subject property previously operated as the Martha C. Rose Chemical, Inc (Rose Chemical site). A more detailed discussion of the Rose Chemical site is provided in Section 5.5 of this Phase I ESA report. Currently, the subject property is vacant land that contains a hoop building, storage shed, and gravel parking.

2.4 DESCRIPTIONS OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS ON THE SITE

The subject property encompasses approximately 26 acres and is currently vacant land that contains a hoop building, storage shed, and gravel parking.

2.5 CURRENT AND PAST USES OF ADJOINING/SURROUNDING PROPERTIES

The site is bounded to the north by a railroad line with residential properties and undeveloped land beyond, to the east by a city maintenance facility and residential and commercial properties, to the south

by Highway 58 with residential and commercial properties beyond, and to the west by undeveloped land and residential properties with the City of Holden Wastewater Treatment Facility beyond.

2.6 GEOLOGIC, HYDROGEOLOGIC, HYDROLOGIC, AND TOPOGRAPHIC CONDITIONS

The following sections describe the environmental setting of the site and surrounding area.

2.6.1 Topography

Based on the topographic maps and Google Earth imagery reviewed, elevation at the site ranges from 829 feet above mean sea level (amsl) to 850 feet amsl. The topographic gradient is generally west to northwest.

2.6.2 Geologic Setting

Johnson County is located in the Dissected Till Plains of the Central Lowlands physiographic province of Missouri. The geologic stratigraphy of the site area consists of interbedded limestones and shales of the Mississippian System Chouteau Group.

Dominant soil in the site vicinity consists of Sampsel and Haig series soils (Natural Resources Conservation Service [NRCS] 2016). The Sampsel series consists of somewhat poorly drained soils formed in residuum weathered from shale on hillslopes, shoulders, and side slopes. Slopes range from 5 to 9 percent. The upper 7 inches of this soil consists of silty clay loam with silty clay beneath, extending to approximately 80 inches below ground surface (bgs). The Haig series consists of poorly drained soils formed in clayey loess. These soils are on flats, summits, and talfs. Slopes range from 0 to 2 percent. The upper 7 inches of this soil consists of silt loam with silty clay loam beneath, extending to approximately 13 inches bgs, then silty clay extending to approximately 38 inches bgs, with silty clay loam beneath, extending to approximately 79 inches bgs (NRCS 2016).

2.6.3 Hydrogeology

Johnson County is split between the Springfield Plateau groundwater province and the West-Central Missouri groundwater province. There are three aquifers in the Springfield Plateau groundwater province. The uppermost aquifer in the area is the Springfield Plateau Aquifer, which consists of Mississippian-age limestone, cherty limestone, and sandy chert. The Mississippian rocks are mostly limestone and develop karst features; however, the karst development in this area appears more recent than in the neighboring Salem Plateau groundwater province further east. The Western Interior Plains

confines the Springfield Aquifer and is underlain by the Boston Mountains and Osage Plains. The karst drainage features are not as widespread, and subsurface conduit systems in the Springfield Plateau groundwater province drain smaller areas than those in the Salem Plateau. Much of the karst development in the Springfield Plateau has developed in the Burlington-Keokuk Limestone (Adamski, Petersen, Freiwald, and Davis, 1995). The Springfield Plateau Aquifer is underlain by a confining unit, Ordovician and Cambrian-age dolomites of the Ozark Aquifer, another confining unit, and the Cambrian-age dolomites of the St. Francois Aquifer. Groundwater used for drinking is typically derived from the Ordovician Roubidoux Formation in the Ozark Aquifer. The major high-yielding sources of groundwater in the county are the Gasconade Dolomite, the Gunter Member of the Gasconade Formation, the Eminence and Potosi Dolomites, and the Bonneterre Dolomite (Adamski, Petersen, Freiwald, and Davis, 1995).

The site also lies within the West-Central Missouri groundwater province. The West-Central Missouri groundwater province lies northwest of the Salem Plateau. The boundary between the two is a freshwater-saline water transition zone. South and west of the transition zone, groundwater in the Springfield Plateau (Ozark and St. Francois aquifers) is of good chemical quality. North and west of the transition zone, these same aquifers yield water that is too mineralized for domestic use. Potable groundwater in the region is difficult to obtain. Relatively shallow Pennsylvanian-aged limestone and sandstone produce low-yielding, marginal-quality water (MDNR 2014).

2.6.4 Hydrology

Drainage at the site infiltrates into the surface soil or flows overland following the topographic gradient to the north-northwest toward East Pin Oak Creek.

3.0 USER-PROVIDED INFORMATION

The following section summarizes information provided by Ms. Tracy Brantner**,** the Johnson County Economic Development Corporation, with regard to the Phase I ESA. A copy of a user questionnaire is included as Appendix C.

3.1 EXISTING INFORMATION AND DRAWINGS

Tracy Brantner (Executive Director of the Johnson County Economic Development Corporation) provided the EPA Record of Decision, Explanation of Significant Differences for the Record of Decision, and a figure showing the former monitoring wells for the Rose Chemical site at the subject property (See

Appendix D). A detailed discussion of the Rose Chemical site is included in Section 5.5 of this Phase I ESA report.

3.2 SUMMARY OF TITLE INFORMATION

No title records for the site were provided by the users.

3.3 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

The users were unaware of any information regarding environmental liens. Ms. Brantner indicated that a deed restriction prohibiting the drilling or installation of groundwater wells has been placed on the subject property.

3.4 SPECIALIZED KNOWLEDGE

Ms. Brantner (Executive Director of the Johnson County Economic Development Corporation) provided the EPA Record of Decision, Explanation of Significant Differences for the Record of Decision, and a figure showing former monitoring wells on the subject property.

3.5 RELATIONSHIP BETWEEN PURCHASE PRICE AND FAIR MARKET VALUE

The users reported that the property value has not been established. The tract of land was donated to the City of Holden following cleanup of the Rose Chemical site.

3.6 OWNER, SITE MANAGER, AND OCCUPANT INFORMATION

The subject property is currently owned by the City of Holden.

3.7 REASON FOR PERFORMING PHASE I ESA

The City of Holden requested this Phase I ESA for the subject property to help the City of Holden comply with the application for a Missouri Certified Site Program. A Missouri Certified Site requires a high level of due diligence and can initiate development by significantly reducing the risk(s) for potential buyers.

4.0 SITE RECONNAISSANCE

A site reconnaissance was conducted on November 3, 2016, by Seagull Team Member Jon DeBruine. Mr. Rick Edwards, mayor of the City of Holden, and Ms. Tracy Brantner (Executive Director of the

Johnson County Economic Development Corporation), were present during the site reconnaissance. Photographic documentation from the site reconnaissance is included in Appendix E.

4.1 METHODOLOGY AND LIMITING CONDITIONS

The site reconnaissance consisted of a visual inspection of the site in accordance with requirements set forth in 40 CFR Part 312, and observations of the perimeter area were noted to assess the presence of environmental concerns. Access was available to all areas of the site.

4.2 GENERAL SITE SETTING

The following sections describe the site's main features.

4.2.1 Site Description

The subject property encompasses approximately 26 acres and is currently vacant land that contains a hoop building, storage shed with gravel parking lot.

4.3 SPECIFIC RECONNAISSANCE ITEMS

The following sections summarize observations during the reconnaissance.

4.3.1 Hazardous Substances and Petroleum Products

Petroleum products (gasoline, oil, and lubricants) were observed at the City of Holden Street Department facility adjacent to the subject property (to the east, roughly 20 feet) in multiple 55-gallon drums and various containers. Additionally, stained soil and gravel were observed in multiple places where the drums of containerized material were stored. Based on the identified petroleum products, along with the stained soil and gravel, poses a REC to the subject property.

4.3.2 Hazardous Waste

No hazardous waste was observed at the subject property.

4.3.3 Landfills, Dumps, Burials, or Solid Waste Disposal

No landfills, dumps, evidence of burial activities, or solid waste disposal were observed at the site; however, there were multiple vehicles on the northern portion of the subject property.

4.3.4 Storage Tanks

Underground Storage Tanks

No indications of underground storage tanks (UST) were observed on the site or within the immediate vicinity of the site.

Aboveground Storage Tanks

No indications of aboveground storage tanks (AST) were observed on the site; however, there are four ASTs at the City of Hold Street Department facility adjacent of the subject property (to the east). These ASTs do not pose a REC to the subject property.

4.3.5 Polychlorinated Biphenyls-containing Equipment

No equipment that could potentially contain polychlorinated biphenyls (PCB) was observed at the site.

4.3.6 Heating, Ventilation, and Air Conditioning System and Fuel Source

No heating, ventilation, and air conditioning system or fuel source were observed during the site reconnaissance.

4.3.7 Drains, Sumps, Pools of Liquids, Standing Water, Cisterns, and Cesspools

No standing water, pools of liquid, cisterns, or cesspools were observed during the site reconnaissance.

4.3.8 Pits, Ponds, and Lagoons

No pits, ponds, lagoons, or open pools likely to contain or to have been used in the disposal of hazardous substances or petroleum products, or for waste disposal or waste treatment, were observed on the site.

4.3.9 Stains or Corrosion and Stained Soil or Pavement

Stained soil and gravel were observed at the City of Holden Street Department facility adjacent to the subject property (to the east) where drums of containerized material (waste oil and unmarked petroleum-related material) are stored. The identified petroleum products, along with the stained soil and gravel, pose a REC to the subject property.

4.3.10 Areas of Dead, Distressed, Discolored, or Stained Vegetation

Areas of stained vegetation were observed at the City of Holden Street Department facility adjacent to the subject property (to the east).

4.3.11 Possible Fill, Grading, or Solid Waste Disposal

No improper disposal is known to have occurred at the site.

4.3.12 Smells of Chemical Gases, Petroleum Products, or Noxious Odors

No smells of chemical gases, petroleum products, or noxious odors were noted at the time of the site reconnaissance.

4.3.13 Wastewater and Stormwater Systems and Discharges

No wastewater or discharge areas were observed at the site.

4.3.14 Wells and Potable Water Supply

The subject property can be provided municipal water by the City of Holden. During the site reconnaissance, no dry, irrigation, injection, abandoned, or other wells were observed on the site.

Ms. Brantner (Executive Director of the Johnson County Economic Development Corporation) provided a figure showing 15 former monitoring wells on the subject property (see Appendix D).

4.3.15 Utilities

The subject property has access to utilities provided by the City of Holden.

4.3.16 Other Site-specific Environmental Conditions

No other site-specific environmental conditions were observed during the site reconnaissance.

4.4 ASBESTOS AND LBP SURVEYS

Asbestos and LBP surveys were conducted during the site visit, in conjunction with the site reconnaissance activities. The purpose of the surveys was to visually identify suspected ACM and/or LBP. No visual ACM and LBP was identified during the site reconnaissance. A subsequent asbestos and/or LBP inspection is not required.

4.5 VICINITY RECONNAISSANCE

The site is bounded to the north by a railroad line with residential properties and undeveloped land beyond, to the east by a city maintenance facility and residential and commercial properties, to the south by Highway 58 with residential and commercial properties beyond, and to the west by undeveloped land and residential properties with the City of Holden Wastewater Treatment Facility beyond. The site vicinity generally includes a mix of residential and commercial properties.

5.0 INTERVIEWS

The objective of conducting interviews is to obtain information concerning RECs in connection with the site. Mr. Rick Edwards (mayor of the City of Holden) and Tracy Brantner (Executive Director of the Johnson County Economic Development Corporation) were the primary contacts. Interviewees were cooperative and forthcoming with information, unless otherwise specified.

5.1 INTERVIEW WITH OWNER

Mr. Edwards was interviewed by Seagull. Mr. Edwards stated that the subject property was previously used as a chemical handling facility known as Rose Chemical. He was not aware of any other environmental issues associated with the subject property.

5.2 INTERVIEW WITH KEY SITE MANAGER

Mr. Edwards is considered the key site manager of the subject property and was interviewed as described above.

5.3 INTERVIEW WITH CURRENT OCCUPANTS

There are no current occupants at the subject property.

5.4 INTERVIEW WITH PAST SITE OWNER/OCCUPANTS

No interviews were conducted with past owners or occupants of the subject property during this Phase I ESA.

5.5 INTERVIEW WITH LOCAL GOVERNMENT OFFICIAL

On November 16, 2016, Seagull contacted Ms. Jamie Bernard-Drakey of EPA's Region 7 Superfund Division to discuss the Rose Chemical site (EPA ID MOD980633069). In 1982, Rose Chemical began

operations as a PCB processing facility on the subject property. Prior to the company ceasing operations in February 1986, Rose Chemical had received approximately 23 million pounds of PCB materials. Approximately 14 to 16 million pounds of these PCB materials were abandoned at this facility.

On November 12, 1986, EPA Region 7 issued an Administrative Order on Consent (AOC) to the Rose Chemicals Steering Committee (RCSC). RCSC is the committee that containerized and secured PCB solids and liquids and completed a waste inventory for the subject property. A second AOC was issued November 19, 1987, ordering RCSC to remove the containerized contaminants from the subject property and to complete a Remedial Investigation/Feasibility Study (RI/FS). The PCB waste was transported and disposed of in a permitted chemical waste landfill or at an incineration facility. The RI/FS identified PCBs in surface and subsurface soils, pond sediments, and sediments of East Pin Oak Creek and an unnamed tributary to East Pin Oak Creek. Based on this information, EPA issued a Record of Decision (ROD) on March 6, 1992. The ROD determined the remedial actions to be taken at the site, which included:

- The removal and off-site disposal of sediments containing PCBs in excess of 0.18 milligrams per kilograms (mg/kg) from the creek;
- Excavation, removal, and off-site disposal/treatment of soils containing PCBs in excess of 10 mg/kg;
- Dismantling and off-site disposal/treatment of the buildings;
- Backfilling all excavated areas with clean soil, regrading, and seeding;
- Monitoring of the subject property's groundwater;
- A restriction on the property's chain of title prohibiting the use of groundwater;
- Treatment of any other contaminated materials.

On September 3, 1992, EPA Region 7 issued a third AOC directing RCSC to perform a Remedial Design (RD) and to implement the RD by performing a Remedial Action (RA). During the RA, 31,419 tons of contaminated soil was removed from the site. The RA was completed in July 1995, and groundwater monitoring ceased in mid-1999. Lastly, a deed restriction prohibiting the drilling and/or installation of groundwater wells has been placed on the subject property. As a result, the Rose Chemical site poses a HREC to the subject property.

6.0 RECORDS REVIEW

The purpose of the records review was to obtain and review records to help identify RECs in connection with the site.

6.1 ENVIRONMENTAL RECORDS SOURCES

The following sources of environmental records were accessed and reviewed as part of this assessment.

6.1.1 Environmental Database Search

Federal, state, regional, and local records were reviewed to assess whether any unauthorized releases of hazardous substances or other events with potentially adverse environmental effects have occurred at the site or at any facility within the approximate minimum search distance. Environmental Data Resources (EDR) performed a database search of the site in accordance with ASTM E 1527-13 (EDR 2016a). A copy of this report is included as Appendix F.

The databases searched have been developed and are updated by federal, state, and local agencies. While these databases are generally reliable and comprehensive, some out-of-date data no longer reflecting actual site conditions may be encountered. The Government Records Searched/Data Currency Tracking section of the EDR report in Appendix F identifies when each database was updated.

A review of the facilities listed within the EDR Radius Map with GeoCheck® report (EDR 2016a) was conducted by Seagull and summarized as follows:

- The subject property was included in 11 databases: Comprehensive Environmental Response, Compensation, and Liability Information System – No Further Remedial Action Planned (CERCLIS-NFRAP); U.S. Engineering Controls (US ENG CONTROLS); U.S. Institutional Controls (US INST CONTROLS); Resource Conservation and Recovery Act – Non-Generators/No Longer Regulated (RCRA-NonGen/NLR); Records of Decision (ROD); Potentially Responsible Parties (PRP); Integrated Compliance Information System (ICIS); Facility Index System/Facility Registry System (FINDS); Facility and Manifest Data (NY MANIFEST); Site Management and Reporting System (MO SMARS); and Enforcement & Compliance History Information (ECHO). These listing are based on the Rose Chemical site that was previously at the subject property. The Rose Chemical site poses a HREC to the subject property.

- The database search identified 23 surrounding sites, which are summarized in the table below. Unless otherwise noted, the listed surrounding sites do not pose RECs to the subject property based on distance, topography, estimated groundwater flow direction, and/or current regulatory status.

Regulatory Database	Search Distance (in miles)	Total Sites Listed
State and Other Environmental Records		
Leaking Aboveground Storage Tanks (MO LAST)	0.50	1
Leaking Underground Storage Tanks (MO LUST)	0.50	5
Registered Underground Storage Tanks (MO UST)	0.25	5
Registered Aboveground Storage Tanks (MO AST)	0.25	2
Voluntary Cleanup Program (MO VCP)	0.50	1
Local Brownfields (US BROWNFIELDS)	0.50	1
Resource Conservation and Recovery Act – Non-Generators/No Longer Regulated (RCRA-NonGen/NLR)	0.25	5
Site Management and Reporting System (MO SMARS)	0.50	2
EDR High Risk Historical Records		
EDR Historical Cleaners (US Hist Cleaners)	0.125	1

Leaking Aboveground Storage Tanks

The leaking aboveground storage tanks (LAST) database contains sites where spills associated with ASTs have been reported. This database is managed by MDNR.

- One LAST site (Bulk Fuel Plant-301 West [W.] Madison) was identified within the search radius. That LAST site does not pose a REC to the subject property based on the distance, topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

Leaking Underground Storage Tanks

The leaking underground storage tanks (LUST) database contains sites where spills associated with USTs have been reported. This database is managed by MDNR.

- Five LUST sites were identified within the search radius. These LUST sites do not pose RECs to the subject property based on the distance, topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

Registered Storage Tanks

These databases contain listings of state-registered USTs and ASTs.

- Five UST and two AST sites were identified within the search radius. These sites do not pose RECs to the subject property based on the distance, topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

Voluntary Cleanup Program

The Voluntary Cleanup Program (VCP) database identifies sites that are participating (and have previously participated) in the state's VCP.

- One VCP site was identified within the search radius. That VCP site does not pose a REC to the subject property based on the distance, topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

Local Brownfields

The local Brownfields (U.S. Brownfields) database includes sites addressed by Cooperative Agreement recipients and sites addressed by Targeted Brownfields Assessments.

- One Brownfields site was identified within the search radius. That site does not pose a REC to the subject property based on the distance, topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

Other Ascertainable Records

These databases include RCRA-Non Generators/No Longer-Regulated (RCRA-NonGen/NLR) and Site Management and Reporting System (SMARS) sites. RCRA-NonGen facilities do not presently generate hazardous waste. SMARS is a listing of Superfund sites, Federal Facilities, and Brownfields Voluntary Cleanup Program sites in Missouri.

- Five RCRA-NonGen sites were identified within the search radius. These sites do not pose RECs to the subject property based on topography, estimated groundwater flow direction, and/or current regulatory status.

- Two SMARS sites were identified within the search radius. These SMARS sites do not pose RECs to the subject property based on distance, the topographic gradient, estimated groundwater flow direction, and/or current regulatory status.

EDR Historical Cleaners

The EDR Historical Cleaners (US Hist Cleaners) database contains records of potential drycleaner sites compiled by EDR's researchers.

- One Historical Cleaners site (Suds Shoppe-401 W. Mckissock Street) was identified within the search radius. According to the database, Suds Shoppe was in business until 2003. Based on distance, the topographic gradient, and estimated groundwater flow direction, this site poses a REC to the subject property.

Unmapped Sites

The EDR report identified one "non-geocoded" or "orphan" site that, because of poor or inadequate address information, could not be mapped by EDR. Based on site reconnaissance observations and information obtained from database research and on-line mapping resources, this "orphan" site does not pose a REC to the subject property.

6.1.2 Vapor Encroachment Screening

An initial vapor encroachment screening was conducted in accordance with ASTM Practice E 1527-13 to determine if there is a potential for vapors to occur in the subsurface below existing and/or proposed on-site structures as a result of the presence of petroleum, hazardous, or toxic materials that may contain volatile or semi-volatile organic compounds (VOC/SVOC). A "non-invasive" screening process, including a site reconnaissance and records review, was used to conduct the initial vapor encroachment screening. If a potential vapor encroachment condition (pVEC) is identified during the screening process, then it should be listed as a REC to the subject property. No pVECs were identified during the initial vapor encroachment screening for this site.

6.1.3 Valuation Reduction for Environmental Issues

The users provided no information regarding valuation reduction for environmental issues associated with the site.

6.1.4 Engineering and Institutional Controls

As part of the environmental records search performed by EDR, federal databases for institutional and engineering controls were searched. The subject property was listed in both databases. As stated in Section 6.1.1, listing in these databases poses as a HREC to the subject property.

6.1.5 Title Records

Land title records were not reviewed for this report.

6.2 HISTORICAL USE INFORMATION FOR THE SITE AND ADJOINING PROPERTIES

Historical data regarding the site and surrounding area were gathered to determine past uses and evaluate environmental issues that may pose RECs. The following sections describe aerial photographs, Sanborn® maps, topographic maps, and city directories that were available for the site. Historical use documentation referenced in the following sections is included as Appendix G.

6.2.1 Aerial Photographs

Historic aerial photographs of the site for the years 1952, 1958, 1981, 1985, 1990, 1995, 2005, 2006, 2007, 2009, 2010, and 2012 were obtained from EDR (EDR 2016b). The review of these aerial photographs is summarized below:

YEAR	COMMENTS
1952	**Site**: The subject property appears to be a vacant and undeveloped field. **Surrounding Area**: The surrounding area appears to be residential properties and farm pasture land. A railroad line appears directly adjacent to (north of) the subject property. There is a large surface water body to the north-northwest of the subject property.
1958	**Site**: The subject property appears to be undeveloped with the exception of a large structure on the southern portion of the subject property. **Surrounding Area**: The surrounding area appears to be residential properties and farm pasture land. A railroad line appears directly adjacent to (north) the subject property. There is a large surface water body to the north-northwest of the subject property.
1981 1985 1990	**Site**: The subject property appears to be developed with a large facility (presumably the chemical handling facility) with roads and other improvements on the subject property; however, it is difficult to determine due to poor image quality/resolution in the photographs. **Surrounding Area**: The surrounding area appears to be residential properties and farm pasture land. A railroad line appears directly adjacent to (north of) the subject property. The large surface water body to the north-northwest of the subject property is no longer visible.
1995	**Site**: The subject property appears to be vacant, undeveloped land. **Surrounding Area**: The surrounding area appears to be residential properties and farm pasture land, with some commercial properties. A railroad line appears directly adjacent to (north of) the subject property.

YEAR	COMMENTS
2005 2006 2007 2009 2010 2012	**Site**: The subject property appears to be vacant, undeveloped land; however, there are some roads/improvements on the north portion of the subject property. The subject property generally appears in its current condition. **Surrounding Area**: The surrounding area appears to be residential properties and farm pasture land with some commercial properties. A railroad line appears directly adjacent to (north of) the subject property. A municipal wastewater treatment facility is west-northwest of the subject property.

Review of the aerial photographs identified the subject property in its current condition dating back to 2005. From 1981 to 1990, the subject property appears to be a large facility (presumably Martha C. Rose Chemical). A detailed discussion of the Martha C. Rose Chemical facility is included in Section 5.5 of this Phase I Report. The Martha C. Rose Chemical facility poses an HREC.

6.2.2 Sanborn® Map Report

A search for Sanborn® historical fire insurance maps was conducted by EDR (EDR 2016c). Sanborn® maps for the years 1898, 1907, 1914, and 1931 were available for the area. The review of these Sanborn® maps is summarized below:

YEAR	COMMENTS
1898	**Site**: The Sanborn® map does not show the subject property. That portion of the map appears to be missing. **Surrounding Area**: The surrounding area appears to be occupied mostly by residential dwellings.
1907 1914	**Site**: The Sanborn® map does not show the subject property. That portion of the map appears to be missing. **Surrounding Area**: The surrounding area appears to be occupied mostly by residential dwellings. East of the subject property is a company that manufactures metal polish.
1931	**Site**: The Sanborn® map does not show the subject property. That portion of the map appears to be missing. **Surrounding Area**: The surrounding area appears to be occupied mostly by residential dwellings. East of the subject property is a State Highway Department garage. The metal polish manufacturing company east of the subject property is no longer listed shown.

Review of Sanborn® maps did not identify development at the subject property since that portion of the map is missing. The 1907 and 1914 Sanborn® maps shows a metal polish manufacturing company east of the subject property along McKissock Street. Based on distance, the topographic gradient, and estimated

groundwater flow direction, the metal polish manufacturing company poses a REC to the subject property.

6.2.3 Historical Topographic Maps

Historic topographic maps for the years 1885, 1887, 1894, 1954, and 2014 were obtained from EDR (EDR 2016d). All of the maps show the subject property as a developed area. A railroad line directly north of the site is present on the topographic maps. No RECs were identified from review of the topographic maps.

6.2.4 City Directories

City directories can be used in conjunction with other historical records presented in this section to determine previous land use at the site and at surrounding properties. The city directory abstract for the years 1969, 1992, 1995, 1999, 2003, 2008, and 2013 was provided by EDR (EDR 2016e). The address of the site (500 West McKissock Street) was not listed in any of the city directories. Multiple surrounding property addresses were listed and identified as residential and commercial businesses, including Suds Shoppe (drycleaners) in the 2003 city directory at 401 McKissock Street. Based on distance, the topographic gradient, and estimated groundwater flow direction, Suds Shoppe poses a REC to the subject property.

7.0 FINDINGS

The following significant findings were identified from review of historic records, environmental database review, site reconnaissance, or interviews:

- During site reconnaissance activities, Petroleum products (gasoline, oil, and lubricants) were observed at the City of Holden Street Department facility adjacent to the subject property (to the east, roughly 20 feet) in multiple 55-gallon drums and various containers. Additionally, stained soil and gravel were observed in multiple places where the drums of containerized material were stored. Based on the identified petroleum products, along with the stained soil and gravel, poses a REC to the subject property.

- On November 16, 2016, Seagull contacted Ms. Jamie Bernard-Drakey of EPA's Region 7 Superfund Division to discuss the Rose Chemical site (EPA ID MOD980633069). In 1982, Rose Chemical began operations as a PCB processing facility on the subject property. Prior to the company ceasing operations in February 1986, Rose Chemical had received approximately 23 million pounds of PCB materials. Approximately 14 to 16 million of the 23 million pounds of the PCB materials were abandoned at this facility. On November 12, 1986, the EPA issued an AOC to the RCSC. RCSC is the committee that containerized and secured PCB solids and liquids and completed a waste inventory. A second AOC was issued November 19, 1987,

ordering RCSC to remove the containerized contaminants from the site and conduct a RI/FS. The PCB waste was transported and disposed of in a permitted chemical waste landfill or at an incineration facility. The RI/FS identified PCBs in surface and subsurface soils, pond sediments, and sediments of East Pin Oak Creek and an unnamed tributary to East Pin Oak Creek. Based on this information, EPA issued a ROD on March 6, 1992. The ROD determined the remedial actions to be taken at the site which included: (1) The removal and off-site disposal of sediments containing PCBs in excess of 0.18 mg/kg from the creek; (2) Excavation, removal, and off-site disposal/treatment of soils containing PCBs in excess of 10 mg/kg; (3) Dismantling and off-site disposal/treatment of the buildings; (4) Backfilling all excavated areas with clean soil, regrading, and seeding; (5) Monitoring of the subject property's groundwater; (6) A restriction on the property's chain of title prohibiting the use of groundwater; and (7) Treatment of any other contaminated materials. On September 3, 1992, EPA issued a third AOC directing RCSC to perform the RD as described in the ROD and to implement the RD by performing a RA. During the RA, 31,419 tons of contaminated soil was removed from the site. The RA was completed in July 1995, and groundwater monitoring ceased in mid-1999. Lastly, a deed restriction prohibiting the drilling or installation of groundwater wells has been placed on the subject property (Seagull 2016). The Rose Chemical site poses a HREC to the subject property.

- The subject property was included in 11 databases: CERCLIS-NFRAP; US ENG CONTROLS; US INST CONTROLS; RCRA-NonGen/NLR; ROD; PRP; ICIS; FINDS; NY MANIFEST; MO SMARS; and ECHO. These listing are based on the Rose Chemical site that was previously on the subject property. The Rose Chemical site poses a HREC to the subject property.

- One Historical Cleaners site (Suds Shoppe-401 W. Mckissock Street) was identified within the search radius. According to the database, Suds Shoppe was in business until 2003. Additionally, review of the 2003 city directory listed and identified Suds Shoppe (drycleaners) at 401 McKissock Street. Based on distance, the topographic gradient, and estimated groundwater flow direction, this site poses a REC to the subject property.

- Review of the 1907 and 1914 Sanborn® maps shows a metal polish manufacturing company east of the subject property along McKissock Street. Based on distance, the topographic gradient, and estimated groundwater flow direction, the metal polish manufacturing company poses a REC to the subject property.

7.1 DATA GAP ANALYSIS

One deviation from ASTM E 1527-13 was noted for this Phase I ESA. The Seagull Environmental Professional (EP) has conducted an analysis of the data gaps or failures resulting from this deviation, and assessed impacts of these on Seagull's ability to render an opinion regarding conditions indicative of releases or threatened releases of petroleum products or hazardous substances. A summary of that assessment follows.

- Time gaps of more than 5 years were present in available historical information. Historical documents were reviewed back to 1885. Given the consistent observed use of the subject property in the historic information reviewed, it is not necessary to review additional time periods, and the lack of information for all 5-year-or-less intervals is not considered a significant data gap.

8.0 OPINIONS

Three RECs and one HREC described in Section 7.0, have been identified during this Phase I ESA. In the opinion of the Environmental Professional, the aforementioned RECs should be addressed prior to redevelopment of the property.

9.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM E 1527-13 for the property at 500 West McKissock Street in Holden, Missouri. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. Based on available information, this assessment has revealed evidence of three RECs and one HREC in connection with the site, as described in Sections 7.0 and 8.0. Based on the identification of the RECs and HREC, Seagull provides the following recommendations:

- A Phase II ESA should be performed along the eastern boundary of the subject property. Soil and groundwater samples should be collected and analyzed for contaminants commonly associated with drycleaner, petroleum products, and metals polish manufacturing, including volatile organic compounds, total petroleum hydrocarbons, and metals.
- Future use of the subject property should also include proper planning so there is no drilling or installation of groundwater wells.

10.0 CERTIFICATION STATEMENT

The resume of the Site Assessor who conducted the site reconnaissance and the Environmental Professional who prepared the report is provided in Appendix H. I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as define d in 40 CFR Part 312.10. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property addressed in this report. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312, and attest to the completeness and accuracy of the information contained in this report.

If you have any questions concerning the findings and conclusions contained in this report, please call Environmental Professional Ryan M. Lunt at (720) 666-3803.

Site Assessor

Jon Debrunie
Environmental Scientist

Environmental Professional

Ryan M. Lunt, CHMM
Environmental Scientist

11.0 REFERENCES

Adamski,, J., Petersen, J., Freiwald, D., and Davis, J. 1995. *Environmental and Hydrologic setting of the Ozark Plateaus Study Unit Arkansas, Kansas, Missouri, and Oklahoma*. U.S. Geological Survey. Water-Resources Investigation Reports. 94-4022. Accessed on November 14, 2016. On-line address: https://pubs.er.usgs.gov/publication/wri944022 .

American Society for Testing and Materials International (ASTM). 2013. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process: E 1527-13.

Environmental Data Resources, Inc. (EDR).

2016a. Radius Map with GeoCheck®. October 31.
2016b. Aerial Photograph Report. October 31.
2016c. Sanborn® Map Report. October 31.
2016d. Topographic Report. October 31.
2016e. City Directory Report. November 3.

Missouri Department of Natural Resources (MDNR).

2014. Water Resources Center. West Central Missouri Groundwater Province. Accessed on November 14, 2016. On-line address: http://dnr.mo.gov/env/wrc/groundwater/education/provinces/westcentprovince.htm
2005. Geologic Survey and Resource Assessment Division. Bedrock Geology. Accessed on November 14, 2016. On-line address: http://mrdata.usgs.gov/sgmc/mo.html

Natural Resources Conservation Service (NRCS). United States Department of Agriculture. 2016. Web Soil Survey. Johnson County, Missouri. Accessed on November 14, 2016. On-line address: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Seagull Environmental Technologies, Inc. 2016. Interview via email with EPA Region 7 Site Assessment Coordinator for the Rose Chemical Site. November 16.

U.S. Geological Survey (USGS). 1980. Holden, Missouri, 7.5-minute Series Topographic Quadrangle Map.

APPENDIX A
FIGURES

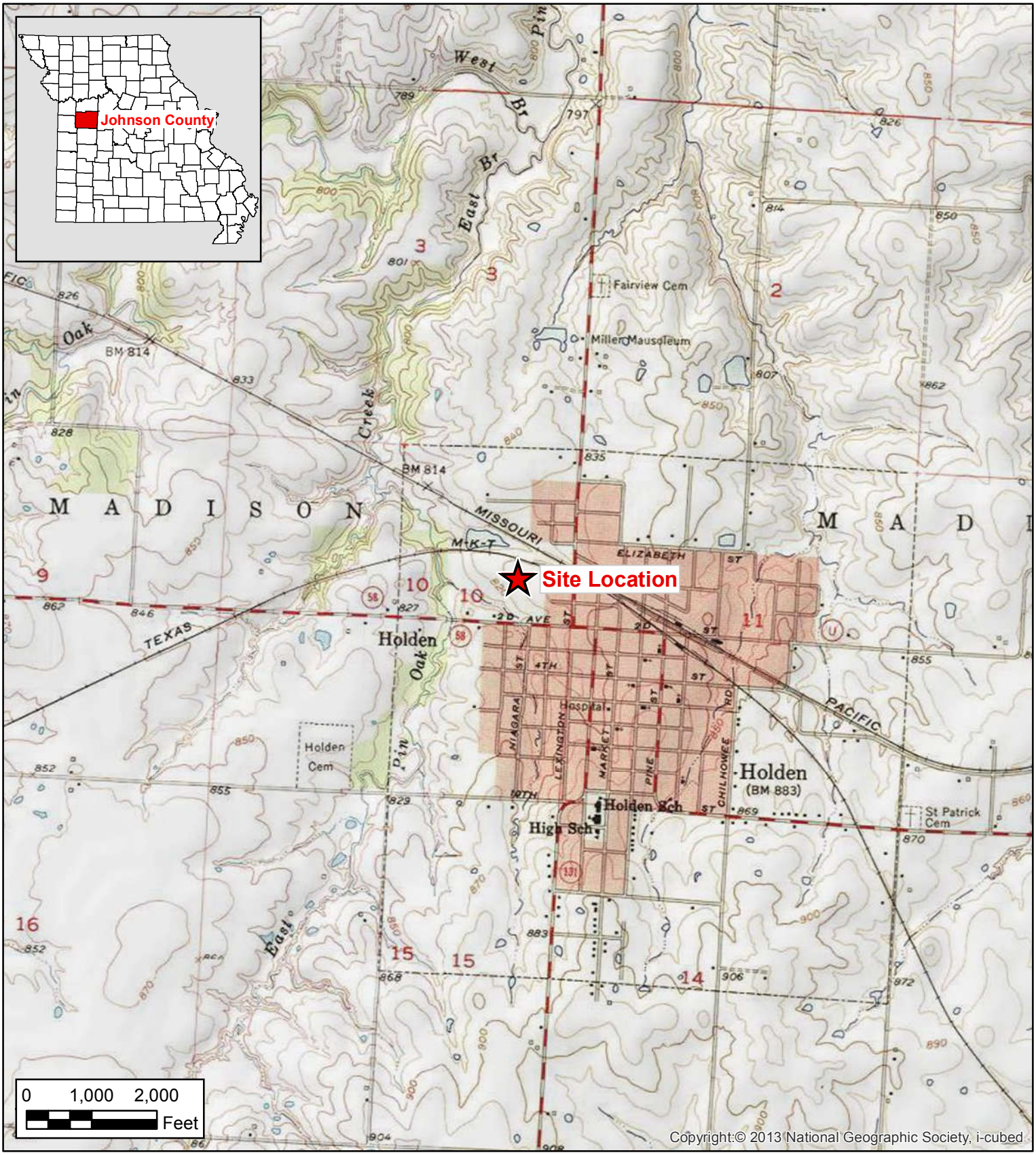

Figure 1
Site Location Map

Holden Business Park Phase I
Holden, Missouri

Seagull Environmental Technologies, Inc.

Source: USGS Holden, MO 7.5 Minute Topo Quad, 1980

Date: November 2016

Project No: MOESA075EA1

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Figure 2
Site Aerial Map

Holden Business Park Phase I
Holden, Missouri

N
W E
S

Seagull Environmental Technologies, Inc.

Source: Esri World Imagery, 2014

Date: November 2016

Project No: MOESA075EA1

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APPENDIX B
PROPERTY INFORMATION

Boundary of the Holden Business Park— Proposed Missouri Certified Site
as defined by the ALTA/ACSM LAND TITLE SURVEY Area—Completed 8/04/2014

APPENDIX C
USER-PROVIDED INFORMATION

User Name: Tracy E. Brantner, CEcD

Site Name: Holden Business Park/Certified Site App **Date:** 11/09/2016

Prepared by: **Title:**

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(1) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law? No

(2) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).

Are you aware of any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? Yes, according to the ALTA/ACSM Land Title Survey completed in July 2014, there is a recorded covenant and restriction per Book 1447, Page 270 prohibiting any the drilling of installing of wells.

(3) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business? No

(4) Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).

Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*? This tract of land was donated to the City of Holden, following the clean up of Rose Chemical. A price hasn't been established.

(5) Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *user*,

(a.) Do you know the past uses of the *property*? Yes, per any file documentation. No, personal experience

(b.) Do you know of specific chemicals that are present or once were present at the *property*? Same as above

(c.) Do you know of spills or other chemical releases that have taken place at the *property*? Same as above

(d.) Do you know of any environmental cleanups that have taken place at the *property*? Same as above

(6) The degree of obviousness of the presence of likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the *user* of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*? Unknown

Attachments:

1. ALTA / ACSM LAND TITLE SURVEY & Soil Compaction Borings
2. File Contents of Rose Chemical Site Cleanup
    a. EPA Record of Decision
    b. Significant Changes to the EPA Record of Decision
    c. Map of the Monitoring Wells

City of Holden Business Park Site Survey -Award

Memo

To:	City of Holden Business Park Site Survey Committee and Holden City Council
From:	R. White, Selection Committee Advisor
CC:	Holden City Council members
Date:	6/26/2014
Re:	City of Holden Business Park Site Survey-Award

Background:

Reference Pioneer Trails RPC City of Holden Business Park Site Survey Firm Selection dated 2/14/2014 and the April 15, 2014 Update. The April Updated stated,

> 'Pioneer Trails requested proposal from Engineering Surveys & Services, Sedalia, MO and Wilson & Olsson & Assoc. was asked to provide a proposal. To date, no proposal has been provided. Pioneer Trails will continue to pursue a contract with Olsson & Assoc. In addition, Pioneer Trails has contact MO DED confirming scope and pricing range recent. '

Olsson & Associates provided a joint proposal dated May 30, 2014 with Midland Surveying (attached) and additional $2,500 for soil borings totaling $19,000. This proposal for the City owned 26+/- acres is deemed reasonable when compared to the Pioneer trails Estimate of $19,646 (attached).

Pioneer trials recommends award of the Holden business Park Site Survey to Olsson Associates.

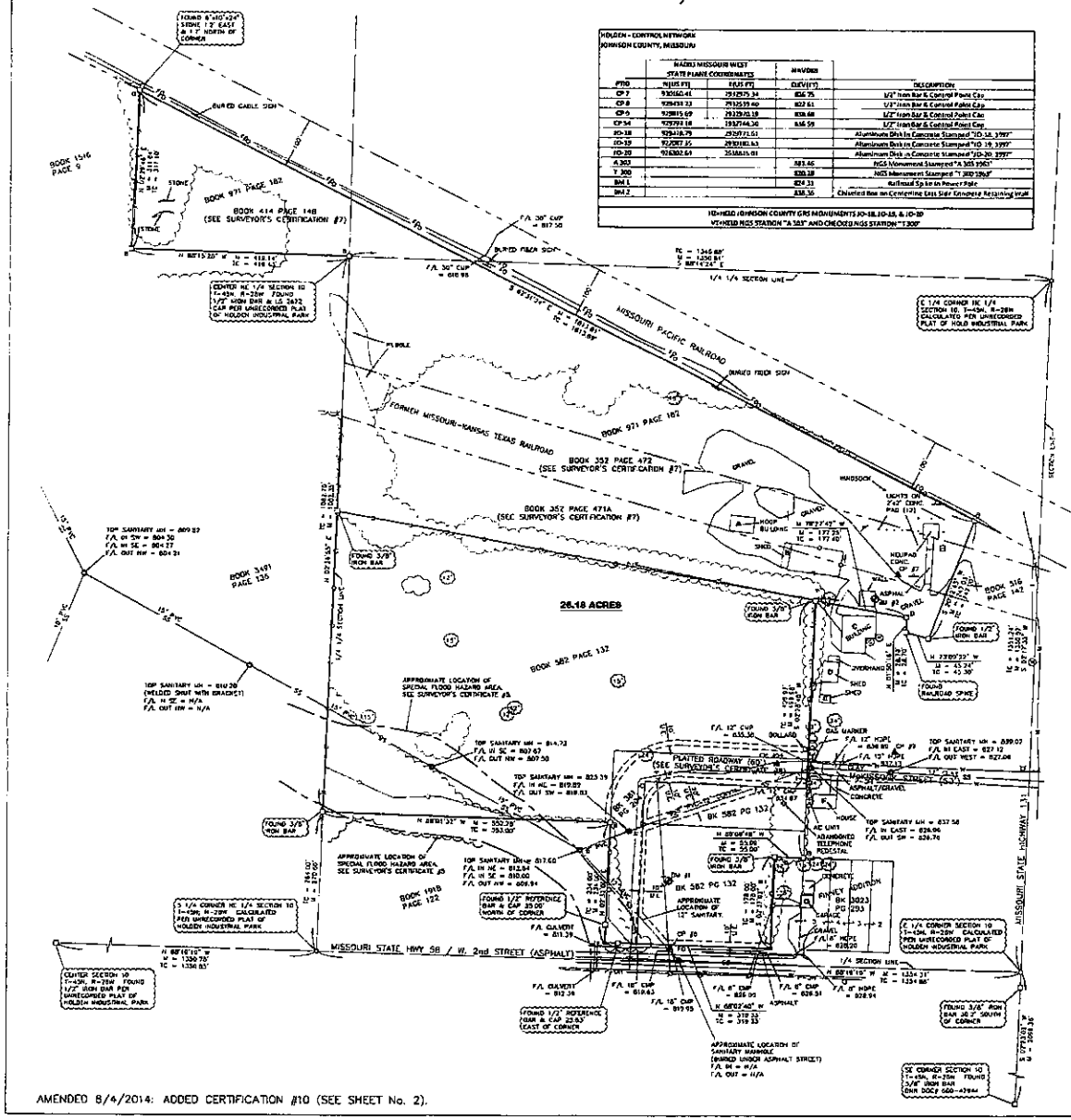
Funding Sources:

The funding source will be between the following coalition partners as shown below:

	(Not to exceed)
Pioneer Trails RPC thru Land Use CDBG Grant	$7,000
City of Holden thru prior MOA	$5,000
Johnson County Economic Development Corp	$3,500
KCP&L	$3,500
TOTAL	$19,000

Randall B. White
Exe. Director, Pioneer Trails RPC

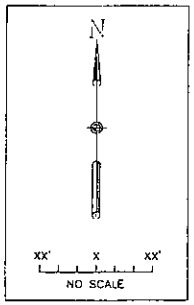
ALTA/ACSM LAND TITLE SURVEY



HOLDEN - CONTROL NETWORK JOHNSON COUNTY, MISSOURI				
	NAD83 MISSOURI WEST STATE PLANE COORDINATES		NAVD88	
PTID	N(US FT)	E(US FT)	ELEV(FT)	DESCRIPTION
CP 7	930560.41	2912575.34	826.75	1/2" Iron Bar & Control Point Cap
CP 8	928434.33	2912535.40	822.61	1/2" Iron Bar & Control Point Cap
CP 9	925815.69	2912540.19	828.68	1/2" Iron Bar & Control Point Cap
CP 54	925794.18	2912744.30	826.59	1/2" Iron Bar & Control Point Cap
JO-18	926418.79	2920731.51		Aluminum Disk in Concrete Stamped "JO-18, 1997"
JO-19	922087.35	2920180.63		Aluminum Disk in Concrete Stamped "JO-19, 1997"
JO-20	926302.64	2918815.01		Aluminum Disk in Concrete Stamped "JO-20, 1997"
A 303			783.46	NGS Monument Stamped "A 303 1963"
T 300			820.18	NGS Monument Stamped "T 300 1963"
BM 1			824.31	Railroad Spike in Power Pole
BM 2			838.36	Chiseled Box on Centerline East Side Concrete Retaining Wall
HOLDEN/JOHNSON COUNTY GPS MONUMENTS JO-18, JO-19, & JO-20 WYNNEWOOD NGS STATION "A 303" AND CHECKED NGS STATION "T 300"				

LEGEND

- ● = DENOTES 1/2" BAR & LS 000120 CAP SET
- ○ = DENOTES CALCULATED CORNER
- □ = DENOTES FOUND MONUMENT
- = DENOTES FOUND 1/2" IRON BAR & LS 2622 CAP SET BY GREGORY BURGESS
- M = MEASURED DISTANCE
- TC = DISTANCE PER TITLE COMMITMENT
- ELECTRIC BOX
- TELEPHONE PEDESTAL
- CLEY WIRE
- FIRE HYDRANT
- INCH
- POWER POLE
- BOLLARD
- BUSH
- TREE
- SANITARY SEWER MANHOLE
- GAS METER
- WATER METER
- C.M.P. = CORRUGATED METAL PIPE
- H.D.P.E. = CORRUGATED PLASTIC PIPE
- F/L = FLOW LINE
- W = WATERLINE
- SS = SANITARY SEWER LINE
- P-OH = OVERHEAD ELECTRIC LINE
- FO = FIBER OPTIC LINE
- G = GAS LINE
- T = UNDERGROUND TELEPHONE LINE
- X = FIELD FENCE
- O-W = OWNR LINK FENCE
- = TREE LINE



REDUCED

Building #	Building Height (ft)	Building Type
A	15.5	Hoop Building
B	11.2	Shed
C	18.3	Maintenance Building
D	16.3	Shed
E	10.3	Shed
F	14.4	House
G	14.9	Garage

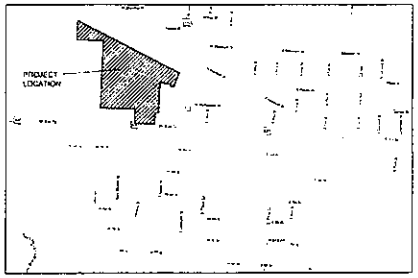
I HEREBY CERTIFY that this topographic survey was completed under my direct professional supervision.

WITNESS hand and seal this Twenty-ninth (29th) day of July, 2014

08-04-14

Adam Teale, P.L.S.
Missouri P.L.S. 2004001336

VICINITY MAP



CALL BEFORE YOU DIG
TOLL FREE 1-800-DIG-RITE (344-7483)
MISSOURI ONE-CALL SYSTEM, INC

PREPARED FOR:
OLSSON ASSOCIATES
SECTION 10, T-45N; R-28W
HOLDEN, JOHNSON COUNTY, MISSOURI

MIDLAND SURVEYING
Midland Surveying, Inc.
Missouri State Certificate of Authority #2001 20

LAND SURVEYORS - PLANNERS
301 North Market, Marysville, MO 64468
ph (660) 562-2633 fax (660) 562-7173
4284 Frederick Blvd, St. Joseph, MO 64506
ph. (816) 233-7900 fax (816) 233-4612

FILE:	DATE:	SCALE:	REVISED:	SHEET NO.
OA_HOLDEN_ALTA_R	JULY 28, 2014	NO SCALE	AUG. 4, 2014	1 OF 2

AMENDED 8/4/2014: ADDED CERTIFICATION #10 (SEE SHEET No. 2).

ALTA/ACSM LAND TITLE SURVEY

Surveyor's Certificate
07-29-14

This survey is made for the benefit of:

City of Holden, Missouri; Olsson Associates; and their successors and assigns of all the foregoing.

I, Adam Teale, Professional Land Surveyor, do hereby certify to the aforesaid parties as to the date set forth above that I have made a careful survey of the tracts of land described as follows:

Part of the Northeast Quarter of Section 10, Township 45, Range 28, in Johnson County, Missouri, described as follows: Commencing at the Southeast Corner of the Northeast Quarter of said Section 10; thence North 87°44'19" West along the South Line thereof, 1354.28 feet to the Southwest Corner of the Southeast Quarter of the Northeast Quarter of said Section 10; thence North 02°46'59" East along the West Line of said Quarter-Quarter Section, 264.00 feet to the true point of beginning; thence North 02°46'59" East along said West Line, 1082.70 feet to the Southeast Corner of the Northwest Quarter of the Northeast Quarter of said Section 10; thence North 87°58'01" West along the South Line of said Quarter-Quarter Section, 419.43 feet; thence North 02°48'59" East, 311.40 feet to a point on the South right-of-way line of the Missouri Pacific Railroad; thence South 62°12'55" East along said south right-of-way line, 1813.89 feet; thence South 21°00'50" West, 247.00 feet; thence North 72°52'14" West, 45.30 feet to a point on the East right-of-way line of Buffalo Street as previously platted; thence North 02°26'01" East along the East right-of-way line of said Buffalo Street, 28.70 feet to a point being an easterly extension of the North Line of Lot 7 in Finney Row, a Subdivision of land in the City of Holden, Missouri, as previously platted and recorded; thence North 79°06'33" West along the North Line of said Lot 7 and the easterly extension thereof, 177.40 feet to the Northwest Corner of said Lot 7; thence South 02°48'01" West along the West Line of said Finney Row Subdivision and a southerly extension thereof, 499.97 feet to the Northwest Corner of Finney Addition, a Subdivision of land in the City of Holden, Missouri, as previously platted and recorded; thence North 87°44'19" West, 55.00 feet; thence South 02°48'01" West, 178.00 feet to a point on the North right-of-way line of Missouri State Highway No. 58; thence North 87°44'19" West along said North right-of-way line, 319.33 feet; thence North 02°46'54" East, 234.00 feet; thence North 87°44'19" West, 553.00 feet to the true point of beginning.

The above described tract of land contains 28.16 acres, more or less, exclusive of public road right-of-way and is subject to recorded and unrecorded easements, restrictions and right-of-ways.

I further certify that:

1. The accompanying survey was made on the ground and correctly shows the location of all buildings, structures, and other improvements situated on the above premises; that there are no visible encroachments on the subject property or upon adjacent and abutting said property except as shown hereon.

2. This map of plat and the survey on which it is based were made in accordance with the laws regulating surveys in the State of Missouri and with the "Minimum Standard Detail Requirements for ALTA/ACSM established and adopted by ALTA and ACSM in 2011 and includes Items 1, 2, 3, 4, 5, 6a, 6b, 7a, 7c, 8, 9, 11b, 16, and 18 in Table A contained hereon. Pursuant to the Accuracy Standards as adopted by ALTA, NSPS, and ACSM and in effect on the date of this certification, the undersigned further certifies that proper field procedures, instrumentation, and adequate survey personnel were employed in order to achieve results comparable to those outlined in the "Minimum Angle, Distance and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA/ACSM Land Title Surveys."

3. All the property as described by Johnson County Title Company, Inc., Issuing Agent for Old Republic National Title Insurance Company Commitment No. J1408087R with effective date of June 26, 2014 at 5:00 PM as described hereon. All easements, covenants and restrictions in said review or otherwise known to me have been plotted hereon or otherwise noted as to their effect of the subject property.

4. Utilities as illustrated are based upon response to Missouri ONE CALL Ticket Locate Request #142032509, #142031217, #142031234, and #142031186. Land Surveyor makes no guarantee as to utilities not field located.

5. A portion of this property lies within the special flood hazard area as located by graphic scale from FEMA Flood Insurance Rate Map #29101C0355E with and effective date of July 4, 2011. Location as illustrated on survey plat is approximate only based upon land surveyors interpretation of FEMA Flood Insurance Rate Map.

6. Schedule B-Part II, Special Exceptions #2. Covenants and restriction per Book 1447, Page 270. No wells shall be drilled or installed in the shallow ground water for any purposes other than ground water monitoring for possible contamination for 50 years after date of recording (April 24, 1997). Subject property is illustrated on survey plat as Book 582, Page 132.

7. Schedule B-Part II, Special Exceptions #3. Reservation of coal, oil, gas, and minerals, and mineral rights for properties described in Book 352, Page 471A; Book 352, Page 472; and Book 414, Page 146. Properties are illustrated on survey plat.

8. Schedule B-Part II, Special Exceptions #4. Easements, roadways, railroads, flood hazard areas, and other items as shown on the Survey prepared by Bowers Survey Company as Job No. 19494-06. Items are illustrated on survey plat. Land Surveyor could not located document as referenced recorded with the Johnson County Recorder of Deeds, Missouri Department of Natural Resources, or Missouri Department of Agriculture.

9. Property has direct public access to Missouri State Highway #58, Nickesack Street, and Missouri State Highway #131.

10. Primary electrical voltage is 4kv. Contact KCP&L with additional questions.

08-04-14

Adam Teale, P.L.S.
Missouri PLS 2004001336

General Notes

1. Except as specifically stated or shown on this plat, this survey does not purport to reflect any of the following which may be applicable to the subject real estate: easements, other than possible easements that were visible at the time of making of this survey; building setback lines; restrictive covenants; subdivision restrictions, zoning or other land-use regulations; and any other facts that an accurate and current title search may disclose.
2. Declaration is made to original purchaser of the survey. It is not transferable to additional institutions or subsequent owners.
3. Survey is valid only if print has original seal and signature of surveyor.
4. Every document of record reviewed and considered as a part of this survey is noted hereon. Only the documents noted hereon were supplied the surveyor.
5. Surveyor has made no investigation or independent search for easements of record, encumbrances, restrictive covenants, or ownership title evidence.
6. The word "certify" or "certificate" as shown and used hereon means an expression of professional opinion regarding the facts of the survey and does not constitute a warranty or guarantee, expressed or implied.
7. Holden Industrial Park was surveyed by Gregory Bowers, LS 2572 in April 2008, however, surveyor can find no record of recorded plat.
8. Elevations as illustrated are referenced to NAVD 88, based upon RTK GPS observation of NGS Station A 303. Published elevation is 881.46.
9. Bearings for the attached survey are in reference to Missouri West Zone Grid Bearings 1983 NAD, determined by GPS observation of Johnson County Geographic Reference System Stations JO-18, JO-19, and JO-20.

REDUCED

Zoning Code
City of Holden
Johnson County, Missouri
I-1 Industrial District

Front Yard Setback: 20 feet
Rear Yard Setback: 20 feet
Side Yard Setback: 5 feet
Maximum Building Coverage: None

Utility Information:
City of Holden (816) 732-8343
CenturyLink (855) 742-6062
Missouri Gas Energy (816) 360-5500
Level 3 Communications (573) 808-1551
MNA-Bluebird (877) 766-2662
KCP&L (888) 471-5275
Sprint Nextel (800) 521-0579

AMENDED 8/4/2014: ADDED CERTIFICATION #10.

PREPARED FOR:
OLSSON ASSOCIATES
SECTION 10, T-45N; R-28W
HOLDEN, JOHNSON COUNTY, MISSOURI

MIDLAND SURVEYING
Midland Surveying, Inc.
Missouri State Certificate of Authority #2003139

LAND SURVEYORS - PLANNERS
501 North Market, Maryville, MO 64468
ph. (660) 582-8631 fax (660) 582-7177
4704 Frederick Blvd. St. Joseph, MO 64506
ph. (816) 233-7900 fax (816) 233-4830

FILE:	DATE:	SCALE:	REVISED:	SHEET NO.
OA_HOLDEN_ALTA_R	JULY 29, 2014	NO SCALE	AUG. 4, 2014	2 OF 2

OLSSON ASSOCIATES

September 17, 2014

Pioneer Trails Regional Planning Commission
Attn: Randall White
802 South Gordon Street
Concordia, Missouri 64020

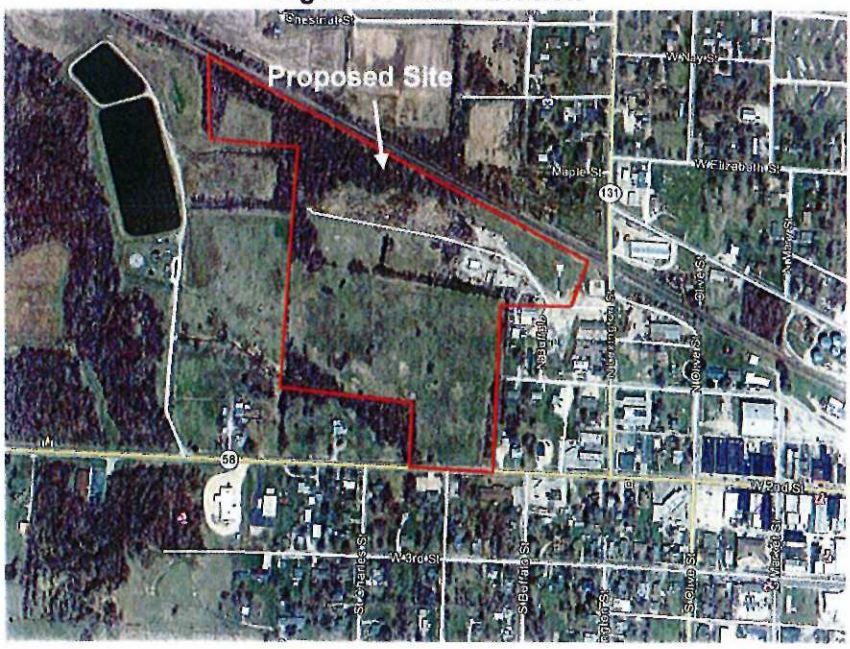
RE: Limited Geotechnical Exploration
Holden, Missouri
Project No. 014-2116

Dear Mr. White:

In general accordance with our Agreement for Professional Services, Olsson Associates (Olsson) has completed our limited geotechnical exploration for the referenced project. As part of this exploration, Olsson completed two borings at the site. A Boring Location Map and boring logs are appended to this letter. This letter discusses the conditions encountered at the borings and, based on these conditions, provides our opinions regarding the geotechnical aspects for the site. Design phase geotechnical explorations should be performed once details of the planned development are known.

Site Description:
The site is located northwest of the intersection of Missouri North 131 and Missouri 58 in Holden, Missouri. The site encompasses about 26 acres. The location is shown in Figure 1.

Figure 1: Site Location



1802 East 123rd Street
Olathe, KS 66061
TEL 913.829.0078
FAX 913.829.0258
www.olssonassociates.com

Railroad tracks extend along the north border of the site. Single family structures border the site on the south and east. A water treatment facility is located to the west. The site is generally grass covered with several stands of thick trees and brush. From our review of readily available historical aerial images obtained from Google Earth and dating back to 1995, portions of the site have been used for agricultural purposes. The northeast portion of the site has also been used as a staging area for equipment and stockpiling material. A round corrugated metal structure is also located on the northeast portion of the site.

Field Exploration and Testing

The drill crew used a truck mounted drill rig to complete two widely spaced borings at the site. The approximate locations are shown on the attached Boring Location Map.

Borings B-1 and B-2 were drilled to depths of 19.5 feet and 15 feet, respectively, below the existing ground surface. Soil samples were obtained at the depths shown on the appended boring logs. Soil samples designated as "ST" samples on the boring logs were obtained with a thin-walled Shelby tube. Soil samples designated as "SS" samples were obtained with a split barrel sampler during performance of the Standard Penetration test. The resulting samples were sealed and transported to our laboratory for testing. Water level observations were made in the boreholes at the times and under the conditions noted on the boring logs. The boreholes were backfilled upon completion.

The drill crew prepared a field log of the material encountered at each boring. The field logs also include the driller's interpretation of the conditions between samples and depths of each stratum change. The attached boring logs represent our interpretation of the field logs based on visual classification and laboratory tests of the samples.

The soil samples were visually classified using the Unified Soil Classification System (USCS). Moisture content tests were conducted on the split barrel samples. Moisture content, density, and unconfined compressive strength tests were performed on selected tube samples. Two Atterberg limits tests were performed on select samples to aid in the classification of the soils.

Soil Stratigraphy

Soil stratification, as shown on the boring logs, represents soil conditions at the specific boring locations; however, variations may occur between or beyond the borings. The stratification lines represent the approximate boundary between soil and bedrock types but the actual transition between layers may be gradual.

The subsurface conditions encountered at the two borings generally consisted of clay soils underlain by weathered shale bedrock. Lean to fat clay soils were encountered at the surface of the borings and extended to depths of 13.5 feet and 19 feet at the two boring locations. The clay soils encountered at our borings were moist and contained varying amounts of silt, sand and

gravel. The clay soils were typically stiff to hard in consistency. Borings B-1 and B-2 encountered weathered shale bedrock beneath the clay soils that extended to depths of 19.5 feet and 15 feet, respectively. The shale was typically moist and dark gray to olive gray.

Groundwater Observations

The drill crew monitored the borings while drilling and immediately after completion for the presence and level of groundwater. Water was observed in boring B-1 while drilling at a depth of 13.5 feet and immediately after drilling at a depth of 8.6 feet below existing grade. Water was not observed in boring B-2. This water level reading provides an approximate indication of the groundwater condition existing on the site at the time the borings were drilled.

Variations and uncertainties exist with relatively short-term water level observations in boreholes. Water levels can and should be anticipated to vary between boring locations, as well as with time within specific borings. Groundwater levels may be expected to fluctuate with variations in precipitation, site grading, drainage and adjacent land use. Long term monitoring with piezometers generally provides a more representative indication of the potential range of groundwater conditions.

Geotechnical Considerations

In our opinion and based on the conditions encountered at the two borings, the site appears suitable to support lightly to moderately loaded structures on shallow foundations. More heavily loaded structures, or structures with strict settlement tolerances, may require an intermediate or deep foundation system. Structure and site specific geotechnical explorations should be performed for individual buildings, utilities and roadways once building details and locations have been established.

The clay soils and shale bedrock encountered at the site have a moderate to high potential to shrink and swell as soil moisture contents fluctuate. A layer of low volume change material is typically placed below grade supported building floor slabs to help reduce the amount of future subgrade volume change that could result in movement of the slabs. The thickness of the LVC zone should be established during design phase geotechnical explorations.

Several stockpiles of material were present in the northeast portion of the site at the time of our exploration. Although not observed at our borings, it is possible, that other areas of existing fill material and/or disturbed areas could be present at this site. Burn pits, cisterns and often remnants of past activities could also be encountered. As portions of the site appear to have been used for agricultural purposes, the upper layer of cohesive soils at this site may consist of loose, wet or dry, lower consistency material. These possible conditions should be considered during design phase geotechnical explorations for the site.

Closing

The preliminary recommendations presented herein are intended only as a general guideline for preliminary planning purposes. We recommend that a detailed subsurface exploration be carried out and a geotechnical report be prepared for future structures prior to final design.

The evaluation presented in this letter is based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This evaluation does not reflect variations that may occur between borings or across the site. If variations appear, it will be necessary to reexamine this evaluation. The scope of this limited exploration did not include an environmental assessment for determining the presence of wetlands and/or hazardous or toxic materials in the soil or groundwater on or near this site. Statements in this report regarding odors, discoloration, or suspicious conditions are strictly for the information of our client.

This letter has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. In the event that changes in the nature, design, or location of the project, as outlined in this letter, are planned, the conclusions contained in this letter shall not be considered valid unless we review the changes, and either verifies or modifies the conclusions of this letter in writing.

We appreciate the opportunity to work with you on this project. If you have any questions regarding this report, or if we may be of further service to you, please contact us.

Sincerely,
Olsson Associates

Christy Wilson, E.I.

STATE OF MISSOURI
JAMES M. LANDRUM
NUMBER
E-28954
PROFESSIONAL ENGINEER

James M. Landrum, P.E.

9/17/14

Boring Location Map

OLSSON ASSOCIATES

North

Scale: n.t.s.	Pioneer Trails Holden, Missouri
Project No. 014-2116	
Approved by: CLW	
Date: 8/19/14	

SYMBOLS AND NOMENCLATURE

DRILLING NOTES

DRILLING AND SAMPLING SYMBOLS

SS:	Split-Spoon Sample
ST:	Thin-walled Tube Sample
GB:	Grab Sample
PP:	Pocket Penetrometer
% Rec:	Percentage of Thin-walled Tube sample recovered
SPT Blow Counts:	Standard Penetration Test blows per 6" penetration
HSA:	Hollow Stem Auger
CFA:	Continuous Flight Auger
N.E.:	Not Encountered
N.A.:	Not Available
N.P.:	Not Performed

DRILLING PROCEDURES

Soil sampling and standard penetration testing performed in accordance with ASTM D 1586. The standard penetration resistance (SPT) N value is the number of blows of a 140 pound hammer falling 30 inches to drive a 2 inch O.D., 1.4 inch I.D. split-spoon sampler one foot. The thin-walled tube sampling procedure is described by ASTM specification D 1587.

WATER LEVEL MEASUREMENTS

Water levels indicated on the boring logs are levels measured in the borings at the times indicated. In relatively high permeable materials, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with only short-term observations.

SOIL PROPERTIES & DESCRIPTIONS

Soil descriptions are based on the Unified Soil Classification System (USCS) as outlined in ASTM Designations D-2487 and D-2488. The USCS group symbol shown on the boring logs correspond to the group names listed below.

Group Symbol	Group Name	Group Symbol	Group Name
GW	Well Graded Gravel	CL	Lean Clay
GP	Poorly Graded Gravel	ML	Silt
GM	Silty Gravel	OL	Organic Clay or Silt
GC	Clayey Gravel	CH	Fat Clay
SW	Well Graded Sand	MH	Elastic Silt
SP	Poorly Graded Sand	OH	Organic Clay or Silt
SM	Silty Sand	PT	Peat
SC	Clayey Sand		

PARTICLE SIZE

Boulders	12 in. +	Coarse Sand	4.75mm-2.0mm	Silt	0.075mm-0.005mm
Cobbles	12 in.-3 in.	Medium Sand	2.0mm-0.425mm	Clay	<0.005mm
Gravel	3 in.-4.75mm	Fine Sand	0.425mm-0.075mm		

COHESIVE SOILS

Consistency	Unconfined Compressive Strength (Qu) (psf)
Very Soft	<500
Soft	500 - 1000
Firm	1001 - 2000
Stiff	2001 - 4000
Very Stiff	4001 - 8000
Hard	> 8000

COHESIONLESS SOILS

Relative Density	Blows per Foot
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	$\geq$ 50

OLSSON ASSOCIATES

LOG OF BOREHOLE NO. B-1

CLIENT: Pioneer Trails Regional Planning Commission

PROJECT NO.: 014-2116

LOCATION: Holden, MO

PROJECT NAME: Limited Geotechnical Exploration

MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (PP) (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
DEVELOPED ZONE		0								
Clay with roots 1.5'										
LEAN TO FAT CLAY			ST 1			(2.0)	19.3	106.7		
With root hairs and gravel, very stiff, moist, yellowish brown 3.0'										
Very stiff, moist to wet, dark grayish green		5	ST 2			3.8	21.3	107.6	50/30	
8.0'										
With silt, sand, iron nodules, very stiff, moist, gray mottled with light brown		10	ST 3			(4.5)	19.8	105.5		
13.5'										
With gravel, very stiff, moist, yellowish brown		15	SS 4		17-44-4 N=48		21.0			
19.0'										
WEATHERED SHALE 19.5'			SS 5		20-50/6" N=70		18.2			
Moist, dark gray										

BASE OF BORING AT 19.5 FEET

WATER LEVEL OBSERVATIONS	
WD	▽ 13.5 ft
AB	▼ 8.6 ft after 0 Hrs
AD	▼ Not Performed

OLSSON ASSOCIATES
1802 East 123rd Street
Olathe, Kansas 66061
Telephone: 913-829-0078
Fax: 913-829-0258

STARTED	8/20/14	FINISHED	8/20/14
DRILL CO.	RC DRILLING	DRILL RIG	RC - B-53
DRILLER	Zach	LOGGED BY	C. Wilson
METHOD	POWER AUGER		

OLSSON ASSOCIATES

LOG OF BOREHOLE NO. B-2

CLIENT: Pioneer Trails Regional Planning Commission

PROJECT NO.: 014-2116

LOCATION: Holden, MO

PROJECT NAME: Limited Geotechnical Exploration

MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (PP) (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
DEVELOPED ZONE		0								
Clay with roots 1.0'										
LEAN TO FAT CLAY										
With silt and iron nodules, stiff, moist, reddish brown mottled with dark gray			ST 1			(2.5)	24.3	100.6	49/28	
		5	ST 2			2.1	25.6	100.1		
8.5'										
Gravelly, very stiff, moist, yellowish brown		10	SS 3		5-10-10 N=20		22.5			
13.5'										
WEATHERED SHALE										
Moist, olive gray 15.0'		15	SS 4		12-17-31 N=48		17.0			

BASE OF BORING AT 15.0 FEET

WATER LEVEL OBSERVATIONS	
WD	Not Encountered
AB	Not Encountered
AD	Not Performed

OLSSON ASSOCIATES
1802 East 123rd Street
Olathe, Kansas 66061
Telephone: 913-829-0078
Fax: 913-829-0258

STARTED	8/20/14	FINISHED	8/20/14
DRILL CO.	RC DRILLING	DRILL RIG	RC - B-53
DRILLER	Zach	LOGGED BY	C. Wilson
METHOD	POWER AUGER		

APPENDIX D

EPA REGION 7 ROSE CHEMICAL SITE DOCUMENTS

RECORD OF DECISION

MARTHA C. ROSE CHEMICALS SITE

MARCH 1992

RECORD OF DECISION
DECLARATION

SITE NAME AND LOCATION

Martha C. Rose Chemicals, Inc.
Holden, Missouri

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Martha C. Rose Chemicals, Inc. site in Holden, Missouri, chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This decision is based on the administrative record for this site.

MDNR feels residential use should be prohibited at the site.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances at and from this site, if not addressed by implementation of the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This final remedy addresses remediation of soil, sediment, and buildings and structures contaminated by PCBs. This action addresses the principal threats remaining at the site by treating the most highly contaminated soils and debris. Treatment residuals and other contaminated soil and debris will be disposed of offsite. Other than ground water monitoring for a minimum of ten years, the site will not require any long-term management.

The major components of the selected remedy include:

- Excavation and offsite disposal of an estimated 826 cubic yards of PCB contaminated sediments above 0.18 ppm PCBs from an unnamed tributary of East Pin Oak Creek and East Pin Oak Creek.

- Excavation and offsite disposal or treatment of an estimated 4788 cubic yards of soil contaminated above 10 ppm PCBs.

- Dismantling of the Main Building and South Warehouse, including floor slabs and insulation, and the offsite disposal or treatment of the debris.

- Backfilling all excavated areas with clean soil.

- Ground water monitoring for a minimum 10-year period.

- Deed restrictions prohibiting the installation of ground water wells for purposes other than monitoring.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because this remedy may result in hazardous substances above health-based levels remaining onsite, the five-year review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment.

Morris Kay
Regional Administrator
EPA, Region VII

3-6-92
Date

Burns & McDonnell

FAX MESSAGE

Date 12/10/99 Time 4:55 AM/PM

To Mayor, City of Holden, Mo FAX No 816-732-6550

Representing _____ Info. Acct _____

From Rick Roberts Number of Pages (including this cover sheet): 5

Project Name: _____ Project No. _____ Contract No. _____

24 Hour Automatic FAX No. (816) 822-3415 - Aviation & Industrial (Location 270 Second Floor)

24 Hour Automatic FAX No. (816) 822-3517 - Aviation & Industrial (Location 260 Second Floor)

24 Hour Automatic FAX No. (816) 822-3463 - Waste Consultants, Inc. (Location 235 Second Floor)

24 Hour Automatic FAX No. (816) 822-3494 - Waste Consultants, Inc. (Location 219 Second Floor)

24 Hour Automatic FAX No. (816) 822-3412 - Purchasing (Location 656 Second Floor)

Mr. Mayor, here is a copy of the US EPA letter approving the monitoring well abandonment plan and a copy of our work agreement approved by Mr. Doug Ammon of Clean Sites. Our subcontracted driller is scheduled to arrive at the site on Monday 12/13/99 at about 2:00 PM. Call me if you have any questions. Thx. for your help.

Signed Richard L Roberts Operator _____

TEL: (816) 933-8400

U.S. Mail Address: P.O. Box 418173, Kansas City, Missouri 64141-6173

Parcel and Express Package Address: 9400 Ward Parkway, Kansas City, Missouri 64114

010397 Form G-0-2

Central File
99-447-4
ROSECHEM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

NOV 0 8 1999

Sheldon A. Zabel
Schiff Hardin & Wait
6600 Sears Tower
Chicago, Illinois 60606-6473

Dear Mr. Zabel:

I am writing to approve the Well Abandonment Closure Plan submitted by the Rose Chemical Steering Committee for the Martha C. Rose Superfund site in Holden, Missouri. I do not find any deficiencies in the plan, and it is approved as written. Please inform me as to the planned timing of the closure activities so that I may arrange for appropriate oversight.

I see no reason to add to or to modify the plan as long as the requirements detailed in the state of Missouri's Missouri Well Construction Rules (10CSR 23-4.080) are followed as stated.

If you have any questions, do not hesitate to contact me. I may be reached by telephone at (913) 551-7728 or by e-mail at kinser.steven@epa.gov.

Sincerely,

Steven E. Kinser

Steven E. Kinser R.G.
Remedial Project Manager
Missouri/Kansas Remedial Branch
Superfund Division

cc: Robin Robinson, Robinson Project Management
4155 El Camino Way, Suite A, Palo Alto, California 94306

RECYCLE

FAX MEMORANDUM

CLEAN SITES ENVIRONMENTAL SERVICES, INC.
635 Slaters Lane, Suite 130
Alexandria, VA 22314 USA

Voice: (703) 519-2135
FAX: (703) 519-2141

TO: Rick Roberts Fax 816-822-3463

FROM: Doug Ammon
Voice: (703) 519-2135
Account Code: 8281

SUBJECT: Rose Chemicals Change Order Approval

DATE: December 7, 1999

NUMBER OF PAGES (including this cover): 3

Please give a copy to Paul Husted.

Waste Consultants, Inc.

December 1, 1999

Mr. Doug Ammon
Clean Sites Inc.
635 Slaters' Lane
Alexandria, VA 22314

Change Order for
Monitoring Well Closure Services

Dear Mr. Ammon:

In accordance with your request of June 15, 1999, and as provided for in Exhibit A, Article A.4 of Contract 7501-14.88-CSI, between Clean Sites and Burns & McDonnell, this letter constitutes a Change Order for additional services requested of Burns & McDonnell for the Rose Chemicals Company Site (the SITE).

Administrative Order on Consent, Docket No. VII-92-F-0026 (AOC3), was issued by the Administrator of EPA Region VII and relates to the Remedial Design (RD) and Remedial Action (RA) for the SITE. AOC3 was amended by an Explanation of Significant Difference which suspended further requirements for groundwater monitoring at the SITE. However, the AOC3 requirement for the existing groundwater monitoring wells to be properly abandoned and closed remains in effect.

This change order is for Burns & McDonnell to provide for the abandonment of the existing monitoring wells at the SITE in accordance with the US Environmental Protection Agency (USEPA) approved Well Abandonment Closure Plan, July, 1999 and applicable state well abandonment regulations. Burns & McDonnell will proceed to properly perform the well abandonment and prepare required documentation as required in the Closure Plan approved November 8, 1995 by Steven E. Kinser R.O. (USEPA). All work shall be in accordance with the most recent EPA requirements and guidelines. The work shall commence on or about December 15, 1999.

All services are to be on a time and materials basis in accordance with the terms of the contract. Burns & McDonnell's current rate sheet is attached. Burns & McDonnell's cost schedule estimate provided to Clean Sites via memorandum dated October 25, 1999 is attached. Burns & McDonnell will not perform any additional work unless authorized to do so by Clean Sites, and will respond to all reasonable Clean Sites requests for project deliverables and information.

Burns & McDonnell will abandon the wells in accordance with the Option I estimate with disposal of the residual well materials at a PCB Landfill at the estimated total cost of Forty Nine Thousand Two Hundred Fourteen Dollars ($49,214.00). This estimated cost shall not be exceeded without written approval by Clean Sites, Inc.

Waste Consultants, Inc.

Mr. Doug Ammon
December 1, 1999
Page 2

Please indicate your concurrence with the Change Order by signing and dating both, and returning one of the two originals to Burns & McDonnell.

Sincerely,

Paul A. Hustad, Ph.D.
President

Attachments

PAH/deb213

Agreed:

CLEAN SITES INC.

Doug Ammon
Project Manager

12/7/99
Date

9400 Ward Parkway
Kansas City, Missouri 64114

Tel. 816 333 8787
Fax 816 822 3463
http://www.burnsmcd.com

RECORD OF DECISION

DECISION SUMMARY

MARTHA C. ROSE CHEMICALS SITE

March 1992

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RECORD OF DECISION

DECISION SUMMARY

1.0 SITE NAME, LOCATION, AND DESCRIPTION

The Martha C. Rose Chemicals, Inc. (Rose) site is located at 500 West McKissock Street, immediately north of Missouri Highway 58, in Holden, Missouri as shown on Figure 1. Holden is approximately 50 miles southeast of Kansas City, Missouri. The Rose facility (approximately 11 acres) contains two major buildings, the Main Building and the South Warehouse. It also contains a small shed, a spill containment pond, and three storm water retention ponds. An intermittent unnamed tributary to East Pin Oak Creek flows through the southwest corner of the facility. Figure 2 presents the Rose site layout.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.1 SITE HISTORY

The property upon which the Rose facility sets is owned by the City of Holden and was previously known as the Holden Industrial Park. The South Warehouse was built in the late 1940s, and is believed to have initially been used as a shop by International Harvester. The Main Building was constructed in stages during the 1960s. Royal Industries, Inc. (Royal) was the first company to lease a portion of the facility, having entered into a lease with the City of Holden for the Main Building on June 1, 1976. In early 1977, Lear Siegler, Inc. (Lear) acquired the stock of Royal and in June 1977, Royal was merged into Lear with the result that Lear succeeded to Royal's interest under the lease. A farm implement assembly and painting business operated at the site until early 1980. In December 1979, Lear entered into a sublease with W.C. Carolan Company, Inc. (Carolan) and assigned Lear's option to purchase the facility property to Carolan. The principal owner of Carolan, Walter Carolan, brought in a second company that he owned, American Steel Works, and subsequently leased a portion of the facility to a separate company, PCB Eliminators.

PCB Eliminators operated as a PCB-transfer facility and was in business for approximately one year, 1981. This facility picked up PCB materials from various entities, such as municipalities, rural electric coops, and businesses, consolidated the PCB materials and shipped them to other disposers. In 1982, PCB Eliminators ceased operation at the site. Simultaneously, Walter C. Carolan initiated his own company, Martha C. Rose Chemicals, Inc. (Rose) and began processing polychlorinated biphenyls (PCBs) and PCB capacitors and transformers. So far as has been determined, there was no written sublease or assignment between

Carolan and Rose. Carolan was one of several companies operating at the site under the same ownership, primarily that of Walter C. Carolan. The companies included: Dust Suppression, Inc.; American Steel Works, Inc.; W. C. Carolan Company, Inc.; and Martha C. Rose Chemicals, Inc.

Rose operated at the site from 1982 to February 1986. Rose operated under three approvals granted by the United States Environmental Protection Agency (EPA) under the PCB regulations, 40 C.F.R. Part 761, promulgated pursuant to the Toxic Substances Control Act (TSCA), to decontaminate mineral oil dielectric fluids containing PCBs at concentrations equal to or less than 10,000 parts per million (ppm) and to process PCB transformers and capacitors for disposal. Under the approvals, Rose was required to drain and flush the transformers and capacitors, disassemble the carcasses and then clean the salvageable metals before recycling. Capacitor cores were bagged and stored for disposal. A sodium reduction process was used by Rose to detoxify the PCB-contaminated oil.

During the four years Rose was in operation, it received approximately 23 million pounds of PCB materials from entities whose PCB materials were sent to the Rose facility for treatment or disposal. Rose ceased operations in February 1986, abandoning approximately 14 million pounds of PCB materials at the site.

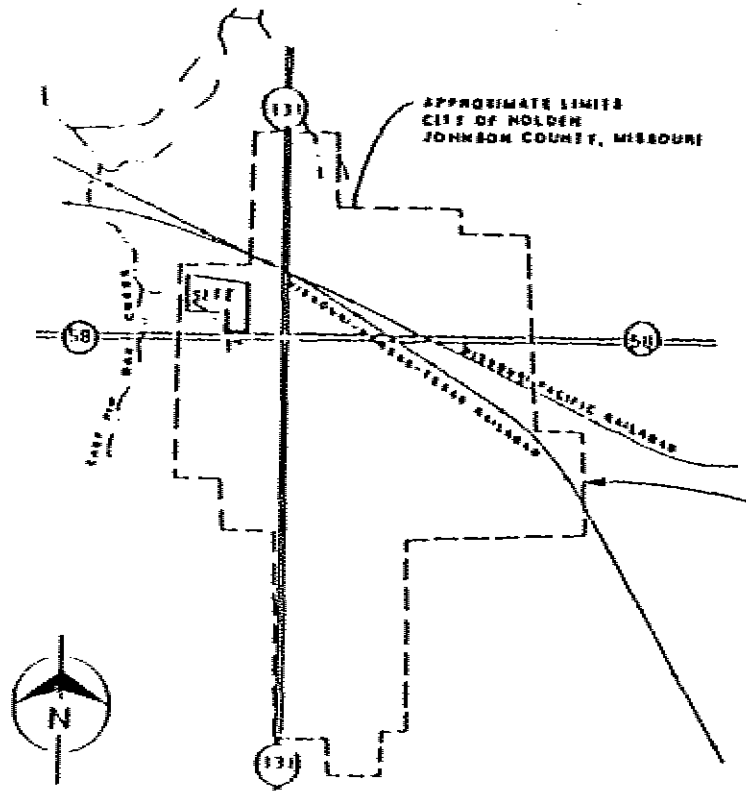
2.2 ENFORCEMENT HISTORY

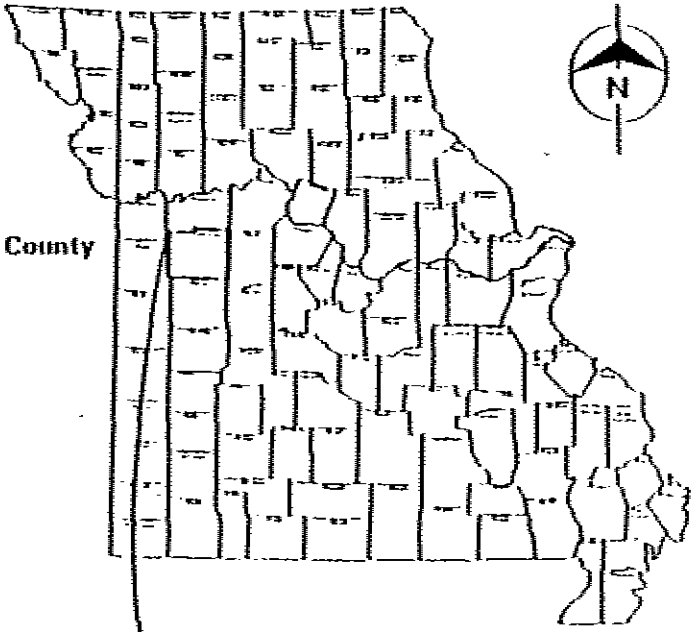
Prior to the abandonment of the site in February 1986, several inspections of the Rose facility were conducted by EPA Region VII personnel and others to determine compliance with 40 C.F.R. Part 761 and other laws.

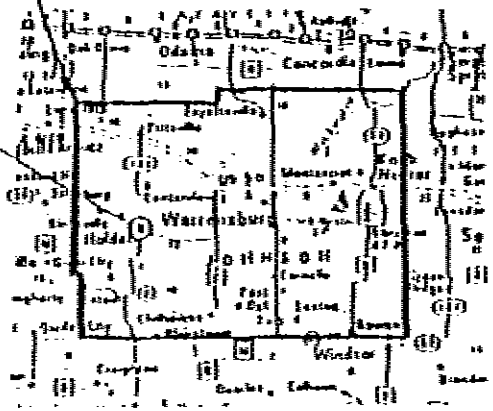
A January 1982 pre-operation inspection of the facility indicated no violations. At the time, few PCB items were stored onsite.

A November 1983 inspection and a review of documents requested from the facility identified violations of 40 C.F.R. Part 761, including unmarked PCB items and containers stored for more than one year. As a result, EPA issued an administrative complaint with a proposed civil penalty to Rose for the violations detected during this inspection. A subsequent Consent Agreement, dated July 2, 1984, required the owner to bring the facility into compliance by August 1, 1984 and to pay a civil penalty of $30,000. However, an August 1984 inspection revealed Rose had failed to comply with the terms of this Consent Agreement and also revealed the following new violations:

(1) Non-compliance with the terms of the capacitor processing approval.
(2) Non-compliance with the terms of the transformer processing approval.







Burns & McDonnell

ROSE CHEMICALS SITE

Figure 1

SITE LOCATION

(LOCUS MAP)

ROSE CHEMICALS SITE
FIGURE 2
SITE LAYOUT

(3) Non-compliance with the terms of the oil processing approval.
(4) Storage of PCBs and PCB items for more than one year.
(5) Improper disposal of PCB items.
(6) Improper records of the PCB items at the facility.
(7) Three improperly marked PCB transformers.
(8) Improper storage of PCBs resulting in spills inside the storage area.
(9) Improper containment of PCBs.

On July 21, 1985, the Occupational Safety and Health Administration (OSHA) inspected Rose and issued an order assessing a fine and requiring improvement in their worker protection program.

As a result of the nine violations detected during EPA's August 1984 inspection, a second Consent Agreement was signed on September 27, 1985 following the issuance of a second administrative complaint, requiring Rose to: (1) resubmit applications for approval of all three processes (capacitor, transformer, and oil processing) by January 27, 1986; (2) implement an inventory control system by approximately April 25, 1986; (3) pay a civil penalty; and (4) come into compliance with the PCB regulations at 40 C.F.R. Part 761.

An inspection of the Rose facility on December 19, 1985 documented numerous instances of violation of the PCB regulations including improper PCB storage. The improper storage violations included the storage of PCB items outside the PCB containment area and the improper storage of PCB items in wooden crates, a large metal bin, paper sacks, and in transformers whose tops had been cut off with a torch. PCB items stored for more than one year were also documented. The curbing in Rose's containment area was also cracked.

On January 7, 1986, the Rose facility was reinspected. The inspection report noted that some of the damaged containment curbing had been repaired. However, PCBs had not been properly containerized since the last inspection, and the material stored for more than one year was still onsite. Some undated PCB items and items without proper labeling were also discovered.

On February 13, 1986, Rose was notified by EPA that the capacitor, transformer, and oil processing approvals would be revoked unless Rose complied with the two Consent Agreements by March 15, 1986. In late February 1986, Rose ceased operations and abandoned the site.

On May 16, 1986, a release of PCB liquid occurred at the Rose site. The total contents, approximately 200 gallons of PCB liquid, leaked from a tanker trailer which had been parked at the site since its abandonment in February 1986. The liquids flowed

into an onsite holding pond and subsequently into the unnamed tributary which flows into East Pin Oak Creek. EPA responded to stabilize the site by increasing site security, removing a number of drums containing potentially explosive elemental sodium and 1,1,1-trichloroethane, and containing the free-flowing spilled PCB liquid.

On May 23, 1986, EPA issued a unilateral Administrative Order under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requiring Walter C. Carolan and his related companies to develop and implement a plan for the clean up of the site. Walter Carolan and his companies refused to comply with this CERCLA Section 106 Order.

Following receipt of notice from Rose that the company was ceasing operation, several of the generators who sent PCB wastes to Rose joined together and formed the Rose Chemicals Steering Committee (RCSC) in the spring of 1986 for the purpose of pursuing response actions at the site. In October 1986, EPA began notifying the approximately 800 potentially responsible parties (PRPs) of the problems existing at the Rose site and invited them to voluntarily undertake and/or participate in response actions at the Rose site.

The RCSC has entered into two Administrative Orders on Consent (AOCs) with EPA Region VII under the authority of Section 106(a) of CERCLA. Pursuant to the first AOC, effective November 12, 1986, the RCSC undertook response actions to secure and stabilize the Rose site. These initial response actions included: constructing a security fence surrounding the site; providing 24-hour security guard services; securing reactive chemicals onsite; draining and containerizing the liquids in several open pits; collecting miscellaneous drums and debris that were scattered around the site; inventorying and inspecting all bulk storage tanks; initiating preliminary onsite surface soil, sludge, and air sampling; and beginning the removal of bulk liquids (PCB oil in tanks).

The second AOC went into effect beginning October 29, 1987. This second AOC required the PRPs to: initiate a removal of PRP-sent material, continue certain activities initiated under the first AOC, and perform a Remedial Investigation/ Feasibility Study (RI/FS).

2.3 REMOVAL HISTORY

Under the first AOC, a partial removal of bulk liquids (PCB oil in tanks) from the site began in July 1987, and continued through December 1987. During this first removal effort, approximately 165,000 gallons (1.3 million pounds) of liquids were removed and incinerated at Pyrochem (APTUS) in Coffeyville, Kansas. Pursuant to the first AOC, the RCSC performed an inventory of the

abandoned PCB materials. The second part of the removal effort was performed under the second AOC from March 1988 to October 1988. Approximately 15 million pounds of liquid PCBs, PCB equipment and PCB debris, as well as 3.6 million pounds of PCB-contaminated soil were removed from the Rose site. The following is a breakdown of the types and approximate amounts of materials disposed of during the two removals:

- Incinerated material - 11.1 million pounds total.
  - -- PCB-contaminated liquid - 6.2 million pounds.
  - -- Capacitors and capacitor parts - 4.5 million pounds.
  - -- Other combustible material - 0.4 million pounds.

- Landfilled material - 10.0 million pounds.
  - -- Bulk and containerized combustible and non-combustible debris - 4.5 million pounds.
  - -- Transformers - 1.9 million pounds.
  - -- Contaminated soil - 3.6 million pounds.

The majority of the incinerated material was treated at the Rollins Environmental Services incinerator in Deer Park, Texas. Materials not requiring treatment were landfilled at the Chemical Waste Management landfill in Emelle, Alabama in accordance with the PCB regulations at 40 C.F.R. Part 761.

A total of 21.1 million pounds of PCB-contaminated materials were removed from the Rose site during the combined removal efforts. A total of 11.1 million pounds (53 percent) of the PCB-contaminated materials were incinerated.

3.0 COMMUNITY PARTICIPATION ACTIVITIES

The RI/FS Reports were presented and outlined at the Holden city offices on June 19, 1991. The Proposed Plan for the Rose site was released to the public for comment on June 20, 1991. The RI/FS Reports and the Proposed Plan are part of the Administrative Record made available to the public and located in information repositories maintained at the EPA Docket Room in Region 7 and at the Holden city offices. The notice of availability of these documents and the Administrative Record was published in the Warrensburg Daily Star and the Holden Progress. A public comment period was held from June 20, 1991 to August 27, 1991. In addition, a public meeting was held on July 11, 1991. At this meeting, representatives from EPA and the State of Missouri answered questions about problems at the site and the remedial alternatives under consideration. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision (ROD).

4.0 SCOPE AND ROLE OF RESPONSE ACTION

The response action selected in this Record of Decision will address the contamination at the site not addressed during prior removal actions. This response action involves removal of PCB-contaminated soil, sediment, and debris from dismantling of building structures and concrete floors.

The remedial action selected in this Record of Decision is intended to address the entire site with regard to the principal threats to human health and the environment posed by contamination at the site as indicated in the endangerment assessment for the site. The findings of the endangerment assessment are included in the RI Report and are summarized in Section 6.0 of this document.

5.0 SUMMARY OF SITE CHARACTERISTICS

This section of the Record of Decision presents the results, conclusions and recommendations of the RI Report. The RI field work, conducted by the RCSC under EPA oversight from January 1989 to January 1990, included the following activities to define the nature and extent of the contamination present at the Rose site and to assess potential impacts of this contamination on public health, welfare, and the environment:

- A geologic and hydrogeologic investigation that included the drilling of eight deep and eight shallow borings; collection and analysis of soil samples from the eight deep borings; installation of 16 ground water monitoring wells in the boreholes; and subsequent collection and analysis of ground water samples from the 16 new and six pre-existing monitoring wells.

- Collection and analysis of surface soil samples from areas which were excavated during the removal effort due to the remaining high concentrations of PCBs.

- Collection and analysis of surface tracking samples from present and former traffic routes to and from the Rose site.

- A sewer investigation which included collection and analysis of sewer sediment and soil samples from 11 test pits adjacent to onsite sewers and performance of three dye tests.

- Collection and analysis of surface water and sediment samples from the East Pin Oak Creek, its unnamed tributary that runs through the southwest corner of the facility property, and onsite ponds.

- Collection and analysis of air quality samples during RI activities.

- A structure investigation including: a structural evaluation; analysis of wipe samples from interior and exterior building surfaces; analysis of samples from concrete, insulation, and impervious surfaces; and analysis of samples from subsurface soil from borings and two test trenches beneath the Main Building.

- An area features investigation which included identification of land uses and climatic conditions.

- Validation of data obtained from previous Rose site screening and characterization activities.

5.1 PHYSICAL CHARACTERISTICS

The Rose site is located within the corporate limits of Holden, Missouri. Surface features at the Rose site include a spill containment pond, three storm water retention ponds, an unnamed tributary which flows into East Pin Oak Creek, and a portion of East Pin Oak Creek. The Rose site slopes gently to the southwest. Land uses adjacent to the Rose site include agricultural, residential, and business/commercial.

According to the RI, no federally listed threatened or endangered wildlife species have been found in the vicinity of the Rose site. Information regarding this site has been provided to an appropriate natural resource trustee for evaluation. As of the date of this Record of Decision, a preliminary natural resource damage assessment has not been completed.

The Rose site surface water drainage is to the southwest at an overall slope of approximately five percent. The unnamed tributary to East Pin Oak Creek intercepts this drainage to the southwest and west of the site. The tributary flows northwest for approximately 1,000 feet where it combines with East Pin Oak Creek. East Pin Oak Creek flows in a northerly direction. Neither of these streams is a classified stream according to the Missouri Department of Natural Resources (MDNR).

Three primary geologic units were investigated at the Rose site. From the surface downward, they include the unconsolidated soil and weathered shale overburden, a series of shale and limestone interbeds, and a sandstone stratum.

The overburden soils consist of variable clays and silty clays ranging in thicknesses from 2 to 13.5 feet. The weathered shale ranges in thickness from 2 to 5 feet. No bedrock exposures on the Rose site were identified during the RI. The hydraulic

conductivity of the overburden soils is in the range of 4×10^{-5} centimeters per second (cm/sec). The permeability of the overburden soils is substantially higher than that of the bedrock, thus, a small amount of ground water is perched on top of the bedrock surface. The flow rate of the ground water through the Rose site in the overburden soils is approximately 360 gallons per day (gpd) with an average linear ground water velocity of 15 feet per year. The flow in the overburden soils recharges the unnamed intermittent tributary on the southwestern part of the Rose site.

The series of shale and limestone beds varies in depth from 15 to 40 feet below land surface (bls) and has a very low permeability (normally on the order of 1×10^{-7} cm/sec). This is lower than the permeability of the overburden soils or the Labette Formation below and creates a preference for horizontal ground water flow rather than vertical.

The sandstone stratum is underlain by another series of shale and limestone interbeds. Ground water flow in the sandstone stratum is predominantly horizontal in a general northwesterly direction. The ground water flow rate in the sandstone stratum beneath the Rose site is approximately 1.2 gpd with an average linear ground water velocity of approximately 0.03 feet per year. The hydraulic conductivity of the sandstone stratum is approximately 1×10^{-6} cm/sec. The ground water in the sandstone stratum discharges to the outcrops in the ravine bottom of East Pin Oak Creek approximately 7,000 feet northwest and north of the Rose site.

The overburden soils and the sandstone stratum are the most important potential water-bearing geologic units. However, neither unit can be used as an aquifer since minimal hydraulic conductivities of aquifers are typically 5×10^{-3} cm/sec, while those reported for the overburden soils and sandstone stratum are approximately 4×10^{-5} and 1×10^{-6} cm/sec, respectively.

The potential for the upper, shallow ground water to percolate through the shales and limestones to the sandstone stratum exists, but it is believed that this movement would occur only over very long time periods because of the low hydraulic conductivity of the shales and limestone. It is unlikely that any significant amounts of contamination could be transported through the sandstone stratum due to its low transmitting ability.

5.2 NATURE AND EXTENT OF CONTAMINATION

Samples collected during the RI were analyzed for PCBs, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs), or for PCBs only, depending upon the media. SVOCs were rarely detected in significant quantities. The conclusions presented below deal mainly with PCBs and VOCs.

5.2.1 Subsurface Soils

Table 1 presents a summary of the subsurface soil sample analytical results which were obtained during the RI. Thirty-seven borings ranging in depth from 5 to 50 feet were drilled at the Rose site during the RI. Samples of subsurface soils were taken from 30 of the 37 borings. Generally, 2 to 4 samples were taken from each of the 30 borings at different depths (from near-surface to a depth of fifteen feet) and analyzed for PCBs, VOCs and SVOCs. Twenty of these borings were drilled beneath the Main Building and one was drilled beneath the South Warehouse. Thirteen test pits/trenches were excavated at the Rose site, eleven adjacent to onsite sewers and two inside the Main Building.

In regard to the exterior subsurface soils, the highest total PCB concentration of 700 parts per million (ppm) was detected in samples of subsurface soil collected adjacent to the storm and sanitary sewers leading from the Main Building. Of the nine exterior subsurface boring samples, lower concentrations (up to 6.3 ppm, but generally less than 1 ppm) of PCBs were detected mainly in the upper two feet of the subsurface soils near the Main Building and the South Warehouse.

In regard to interior subsurface soils, PCBs were detected in samples from 12 of the 20 boreholes beneath the Main Building. Total PCBs were detected: at less than 1 ppm in samples from 4 boreholes; between 1 ppm and 5 ppm in samples from 5 boreholes; and above 5 ppm in samples from 3 boreholes, with a maximum representative result of 18.5 ppm PCBs. PCBs were not detected in the subsurface soil sample from Boring B-10 in the South Warehouse.

The major concentrations of VOCs in exterior subsurface soil were detected in samples from beneath the onsite storm sewer which extends southwest from the Main Building; from beneath the Holden sanitary sewer line which crosses the Rose site from east to west; and from borings just north of the Main Building (boring from MW-110) and just west of the South Warehouse (boring from MW-104). VOCs were detected in the highest concentrations in subsurface soil samples from a test pit located near the Holden sanitary sewer in total concentrations of up to 9,400 parts per

billion (ppb). The highest concentrations of total VOCs in exterior subsurface boring soil samples were 76 ppb (boring from MW-110) and 740 ppb (boring from MW-104).

VOCs were also detected in interior subsurface soil samples collected from borings beneath the buildings. Total VOC concentrations ranged from the detection limit (DL)[1] to a maximum of 3,325 ppb which was detected in a sample from beneath the South Warehouse, and a maximum of 488 ppb which was detected in a sample from beneath the Main Building.

PCBs and VOCs were detected mainly at the top of the overburden soil underneath the Main Building. However, beneath the South Warehouse where the overburden soil is thinner, VOCs were detected down to the bedrock/soil interface, approximately 3 feet below the surface.

The total volume of subsurface soil exceeding 10 ppm PCBs requiring remediation is approximately 1200 cubic yards (cy). The excavation and subsequent disposal or treatment of this soil will address both PCB and VOC contamination.

5.2.2 Surface Soil

Table 2 presents a summary of the surface soil sample analytical results which were obtained during the RI. The surface soil samples collected during the RI were analyzed only for PCBs.

PCBs were detected in surface soils primarily over the eastern part of the site where Rose operations were carried out. Sample analysis indicates surface soils containing PCBs at concentrations of 10 ppm or higher are generally located adjacent to the Main Building and the South Warehouse, in the area between the two buildings, and in the area to the west of both buildings. The PCB concentrations in surface soil samples were less than 10 ppm at more than one-half of the areas from which surface soils were excavated during the removal conducted under the second AOC. Total PCB concentrations in surface soil samples ranged from the DL to the highest concentration of 540 ppm, which was from a sample taken from a segment of a 50- by 50-foot grid in the southwest corner of the site near the South Warehouse.

An average total PCB concentration of 1.1 ppm (with a range from the DL to 3.4 ppm) characterizes the distribution of PCBs in surface soils in an offsite area extending from the eastern Rose site boundary east to a distance of 80 feet and from McKissock

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[1] The analytical detection limit varied in the various sample analyses conducted during the RI. The specific detection limit for each sample analysis that detected contamination can be found in the tables in the RI Report.

Street north to a distance of 160 feet. Wipe samples collected in the road at the two major site access points had an average total PCB concentration of less than 4 micrograms (µg) per 100 square centimeters (cm^2).

The total volume of surface soil exceeding 10 ppm PCBs requiring remediation is approximately 2,600 cy.

5.2.3 Ground Water

Table 3 presents a summary of the ground water sample analytical results which were obtained during the RI. Four rounds of ground water samples were collected and analyzed. Where a sufficient ground water sample was obtained, samples were analyzed for PCBs, VOCs and SVOCs. Sampling procedures in rounds 1 and 2 were suspected to have allowed ground level airborne dust or surface soils contaminated with low concentrations of PCBs to contaminate the ground water samples. For the third and fourth rounds of sampling, samples were collected in a manner to avoid the potential contamination of the ground water samples by surface dust or soils. It appears that the third and fourth rounds provide the most representative data on PCB concentrations in ground water at the Rose site. All four rounds provide representative data on VOC concentrations in the ground water.

PCBs were detected in unfiltered ground water samples from MW-207 and MW-204 collected in the third sampling round. The concentration of total PCBs detected in MW-204 was 1.3 micrograms per liter (µg/l), only slightly greater than the detection limit of 0.5 µg/l. The concentration of total PCBs in MW-207 was 22.5 µg/l. PCBs were not detected in any Round 4 ground water sample.

Elevated levels of several VOCs were detected primarily in the shallow ground water and were consistently detected in all four sampling rounds in shallow groundwater monitoring wells MW-201, MW-204, MW-210, and MW-211. Monitoring wells MW-201 and MW-204 are located near and downgradient of the South Warehouse, which formerly contained a degreasing pit. Monitoring well MW-210 is near the north door of the Main Building. Monitoring well MW-211 is near the sanitary and/or storm sewers. The most significant levels of VOCs were detected in samples from MW-204 and MW-210, with total VOCs ranging from 59,000 µg/l to 75,300 µg/l (MW-204) and from 6,900 µg/l to 11,100 µg/l (MW-210). Table IV-8 of the RI Report identifies the VOCs and the levels detected during each ground water monitoring round.

5.2.4 Sediments

Table 4 presents a summary of the sediment sample analytical results which were obtained during the RI. All sediment samples were analyzed for PCBs, VOCs and SVOCs. Samples were collected

from East Pin Oak Creek, the unnamed tributary, the onsite Holden sanitary sewer manhole, the spill containment and storm water retention ponds, and the drainage ditch which carries storm water from the storm sewer outfall to the storm water retention pond.

PCBs at concentrations greater than 10 ppm were detected in sediment samples collected from East Pin Oak Creek, the unnamed tributary, the spill containment pond, and the drainage ditch. Total PCB concentrations in the 21 samples from East Pin Oak Creek ranged from the DL to 293 ppm. Total PCB concentrations in the 17 samples taken from the unnamed tributary ranged from the DL to 20.8 ppm. The highest PCB concentrations detected in sediment samples collected from East Pin Oak Creek were in a segment extending from the Holden Publicly Owned Treatment Works (POTW) outfall to approximately 500 feet downstream. Total PCB concentrations in samples taken from the onsite spill containment pond were 23.9 and 122 ppm. Total PCB concentrations in samples taken from the drainage ditch were and 2.2 and 24.1 ppm.

VOCs were detected in sediment samples taken from East Pin Oak Creek and the unnamed tributary. Except for two samples from East Pin Oak Creek (one that contained toluene at 6.2 ppm and one that contained total xylenes at 1.8 ppm), the VOCs detected in samples from the creek and tributary were below 1 ppm. Toluene at 11 ppm was found in a sample of sediments from the Holden sanitary sewer line upgradient from the Rose connection to the sewer. Other VOCs were detected in samples from the sewer line, but at levels less than 1 ppm (this line was disconnected under the terms of the second Administrative Order). Total VOCs detected in samples from the spill containment and storm water retention ponds and the drainage ditch were less than 1 ppm in each sample.

The volume of sediments in the unnamed tributary and East Pin Oak Creek requiring remediation is approximately 826 cy. Remediation will address PCB and VOC contamination.

5.2.5 Surface Water

Table 5 presents a summary of the surface water sample analytical results which were obtained during the RI. Samples were collected from East Pin Oak Creek, the unnamed tributary, the spill containment pond, the main concrete pit in the Main Building, and at the former storm sewer discharge point to the unnamed tributary. Generally, two samples were collected from each sampling location, one which was filtered prior to analysis and one which was unfiltered. Samples were analyzed for PCBs, VOCs and SVOCs.

Surface water samples collected from East Pin Oak Creek and the unnamed tributary contained levels of total PCBs at approximately one-half of the locations sampled in filtered and unfiltered

samples. Concentrations ranged from the DL to 21 µg/l in East Pin Oak Creek. PCBs were not detected in surface water samples collected from the unnamed tributary. The distribution of PCBs in East Pin Oak Creek surface water appears to be random. PCBs were also detected in surface water samples collected from the spill containment pond at levels from the DL to 10 µg/l. PCBs were detected in three surface water samples collected from the main concrete pit in the Main Building at levels from 3.5 milligrams per liter (mg/l) to 4.5 mg/l. No PCBs were detected in samples collected at the former storm sewer discharge point.

VOCs were detected in some surface water samples collected from East Pin Oak Creek and the unnamed tributary, including the storm sewer discharge point. Total VOC concentrations in samples from East Pin Oak Creek and the unnamed tributary, excluding suspected laboratory artifacts, ranged from the DL to approximately 78 µg/l. There are no apparent trends relative to surface water VOC contamination in East Pin Oak Creek or the unnamed tributary. Several VOCs were detected in water samples from the main concrete pit in the Main Building. These water samples contained elevated levels of 1,1-dichloroethene (5-68 µg/l), 1,1,1-trichloroethane (45-490 µg/l), 1,2,4-trichorobenzene (200-410 µg/l), and 1,2,4,5-tetrachlorobenzene (160-230 µg/l).

The surface water retention and spill containment ponds have a total capacity of approximately 424,400 gallons. This water, along with any water collected during the implementation of the remedial action from the main pit, the creek or tributary, will be treated prior to discharge from the site. Depending upon the concentration of residual contaminants that may remain following treatment, this water will be discharged to the unnamed tributary, East Pin Oak Creek, or the Holden treatment plant, or will be land-applied onsite.

5.2.6 Air

Air samples collected from worker breathing zones during the in-building RI activities contained dust (particulate) concentrations of 0.2 to 0.5 milligrams per cubic meter (mg/m^3). No PCBs or VOCs were detected in these dust samples. These samples were taken in accordance with the Health and Safety Plan.

5.2.7 Buildings and Structures

Table 6 presents a summary of the Main Building and the South Warehouse sample analytical results which were obtained during the RI. Samples were taken from various structural surfaces, concrete floors at depth (0.5 to 2 inches), and miscellaneous structure materials in the buildings. Surface sampling was accomplished using a wipe sampling procedure. All building and structure samples were analyzed only for PCBs.

5.2.7.1 **Main Building.**

Total PCB concentrations detected in wipe samples collected from the interior floor, wall, ceiling and horizontal beam and fixture surfaces of the Main Building exceeded 10 $\mu g/100\ cm^2$, a level set for high contact surfaces by the PCB Spill Cleanup Policy. Total PCB concentrations in wipe samples from the interior of the Main Building were: floor samples ranging from the DL to 1,160,000 $\mu g/100\ cm^2$; wall samples ranging from the DL to 3,390 $\mu g/100\ cm^2$ (from the main concrete pit); ceiling samples ranging from the DL to 81.5 $\mu g/100\ cm^2$; and horizontal beam and fixture samples ranging from the DL to 830 $\mu g/100\ cm^2$. Total PCB concentrations in wipe samples from the exterior surfaces of the Main Building ranged from the DL to 9.6 $\mu g/100\ cm^2$.

A total of 11 unbiased (random) and 11 biased (from visibly stained areas) concrete cores were removed from the building floor. The top 0.5 inch of each of the cores was ground and analyzed for PCBs. Total PCB concentrations in the top 0.5 inch of concrete core samples taken from the Main Building floor are summarized as follows:

	Total PCBs (ppm)		
Sample	Max.	Avg.	Min.
Unbiased concrete cores	4,390	979	0.15
Biased concrete cores	670,000	214,000	4,900

Three additional samples were collected from each of two concrete cores previously taken from the Main Building to determine the vertical extent of PCB migration into the concrete floor slab. Samples were taken at depths of 0.5 to 1.0 inches, 1.0 to 1.5 inches, and 1.5 to 2.0 inches in each of two cores. One core had the highest total PCB concentration at the surface, while the other had the highest concentration below the surface (0.5 to 1.0 inches). In both samples, the concentrations decreased with depth once the maximum concentration was reached. The total depth of detectable PCB concentrations in the concrete floor slabs could not be ascertained from the existing data collected during the RI.

Insulation cores removed from walls and ceilings were analyzed. Total PCB concentrations ranged from 5.7 micrograms per sample (ceiling) to 25,800 micrograms per sample (ceiling). Destructive samples were collected from nonimpervious rubber, wood and linoleum materials in the Main Building. Total PCBs were detected in seven of the eight samples collected, ranging from 23.1 to 16,600 micrograms per sample.

As indicated in Section 5.2.1 of this Record of Decision, analyses of soil samples collected from beneath the concrete floor of the Main Building indicate concentrations of total PCBs at levels less than 20 ppm, ranging from the DL to 18.5 ppm. Based upon the results of analysis of soil under the concrete floor, it appears that PCB migration through the floor of the Main Building to the underlying soils has not been extensive. PCBs have been primarily contained within the floor slab.

Analyses of soil samples collected from beneath the concrete floor indicate that VOCs are present under the western half of the Main Building. The highest VOC concentrations were found in soil samples collected from beneath the concrete floor between the two pits where solvents were reportedly used and stored by Rose. These concentrations were as high as 488 ppb.

The Main Building consists of approximately 4,620 tons of building material requiring remediation under the selected remedy. This figure includes 4,100 tons of concrete. The volume of soils from beneath the concrete floor slab which will require removal is included with the total volume of subsurface soils, as described in Section 5.2.1 of this Record of Decision.

5.2.7.2 South Warehouse.

Wipe samples were collected from the interior floor, wall, ceiling, and horizontal beam and fixture surfaces of the South Warehouse. Generally, analysis of these samples showed concentrations of PCBs at levels exceeding 10 $\mu g/100\ cm^2$, a level set for high contact surfaces by the PCB Spill Cleanup Policy. Total PCB concentrations in wipe samples from the interior of the South Warehouse were: floor samples ranging from 3.5 to 19,500 $\mu g/100\ cm^2$; wall samples ranging from the DL to 85.6 $\mu g/100\ cm^2$; ceiling samples ranging from 3.5 to 29.7 $\mu g/100\ cm^2$; and horizontal beam or fixture samples ranging from 7.1 to 69 $\mu g/100\ cm^2$. Total PCB concentrations in wipe samples from the exterior surfaces of the South Warehouse ranged from the DL to 21.9 $\mu g/100\ cm^2$.

One unbiased and two biased concrete cores were removed from the warehouse floor. The top 0.5 inch of each of the cores was ground and analyzed for PCBs. Total PCB concentrations in the top 0.5 inch of each concrete core sample were 548 ppm from the unbiased core sample, and 3500 ppm and 270,000 ppm from the biased core samples. As concluded for the Main Building, PCBs are primarily contained in the concrete floor slab of the South Warehouse.

Insulation cores were removed from the walls and ceilings of the South Warehouse. Total PCB concentrations ranged from 24 micrograms per sample (wall) to 7,900 micrograms per sample (ceiling).

As previously described in Section 5.2.1 of this Record of Decision, soil samples collected from one soil boring beneath the South Warehouse were analyzed for PCBs and VOCs. There were no detectable levels of PCBs in these soil samples. Total VOC concentrations in the soil samples decreased with depth from 3325 ppb at 0.5 to 1.0 feet to 12 ppb at 5.0 to 6.0 feet.

The South Warehouse consists of approximately 462 tons of building materials requiring remediation under the selected remedy. This includes 425 tons of concrete. The volume of soils from beneath the concrete floor slab which will require remediation is included with the total volume of subsurface soils as described in Section 5.2.1 of this Record of Decision.

6.0 SUMMARY OF SITE RISKS

As part of the RI/FS, an endangerment assessment (EA) was conducted to assess the current and potential risks to human health and the environment that are associated with the release or threatened release of hazardous substances at the Rose site. Both current and future use scenarios were evaluated. This section summarizes the findings concerning risks of exposure to contaminated sediment, surface and subsurface soils, surface water, ground water and building surfaces.

6.1 SELECTION OF INDICATOR CHEMICALS

A total of 44 chemicals were identified in the various media sampled at the Rose site. Due to the wide variations in occurrence, concentration, and toxicity among contaminants, indicator chemicals were selected to focus on those chemicals that are most likely to pose the greatest potential public health and environmental risk. Indicator chemicals were selected based upon the frequency of detection, concentration, toxicity, environmental mobility, and persistence. The eleven indicator chemicals selected for the Rose site were: PCB Aroclor 1242; PCB Aroclor 1254/1260; 1,1-dichloroethane; 1,1-dichloroethene; g-hexachlorocyclohexane (lindane); methylene chloride; tetrachloroethene; toluene; 1,2,4-trichlorobenzene; 1,1,1-trichloroethane; and trichloroethene.

6.2 TOXICOLOGICAL EVALUATION

To assess the potential health risks associated with exposure to the indicator chemicals selected for the Rose site, assessments published by EPA on the observed effects in humans or laboratory animals exposed to the chemical were reviewed.

The toxic effects of chemicals can be expressed through the use of Reference Doses (RfDs) and Cancer Potency Factors (CPFs). An RfD is a conservative estimate of a daily human exposure that is

unlikely to result in deleterious effects following chronic exposure. A CPF represents the slope of the tumorigenic dose-response curve in the low-dose region. EPA has developed and published both route-specific RfDs for carcinogenic and non-carcinogenic chemicals, and CPFs for carcinogens.

CPFs have been developed by EPA's Carcinogenic Assessment Group for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. CPFs, which are expressed in units of $(ppm/day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in ppm/day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the CPF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Cancer potency factors are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied.

RfDs have been developed by EPA for indicating the potential for adverse health effects from exposure to chemicals exhibiting non-carcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals, that are likely to have appreciable risks of adverse health effects. Estimated intakes of chemicals from environmental media (for example, the amount of a chemical ingested from contaminated drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans). These uncertainty factors help ensure that the RfDs will not underestimate the potential for adverse non-carcinogenic effects to occur.

The CPFs and RfDs for the Rose site indicator chemicals are listed in Table 7.

6.3 EXPOSURE ASSESSMENT

Exposure assessment is the identification of populations potentially exposed to chemicals and the determination of the potential magnitude and duration of their exposures. In this EA, the exposure assessment included three steps: identification of exposure pathways; estimation of environmental concentrations; and estimation of human doses.

Pathways by which a population or an individual could be exposed to chemicals originating from the Rose site under current or hypothetical future uses of the Rose site and surrounding area

were identified. Three potential future scenarios for use of the Rose site were evaluated. They are no future use, industrial development, and residential development. The exposure pathways for each of the three hypothetical scenarios identified for the Rose site are summarized in Table 8.

The level of potential exposure through the various pathways is dependent upon an individual's location and behavior. For each pathway considered in the EA, "typical" and "reasonable worst" case exposures were calculated. The typical case represents the exposure of an individual with somewhat normal activity patterns and generally makes use of assumptions considered to be best estimates. The reasonable worst case provides a more conservative, but still possible, upper bound exposure.

6.4 RISK CHARACTERIZATION

Excess lifetime cancer risks are determined by multiplying the intake level by the CPF. These resultant risks are probabilities that are generally expressed in scientific notation (for example, 1×10^{-6} or $1E^{-6}$). An excess lifetime cancer risk of 1×10^{-6} indicates that, as a plausible upper bound, an individual has a one in one million additional chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site.

Estimates of excess lifetime cancer risk were calculated by multiplying the lifetime average daily dose (LADD) by the CPF. In interpreting cancer risk estimates, the NCP states that for known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound life-time cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response.

The potential for adverse non-carcinogenic effects was derived by calculating the MDD/RfD ratio, where MDD is the maximum daily dose. A ratio greater than one suggests that the exposure should be closely examined for potential adverse effects, although there is no sharp demarcation between safe and unsafe. Because the exposure is based on conservative assumptions and the RfD is derived using safety factors, the MDD may exceed the RfD somewhat.

Tables 9 and 10 present the excess carcinogenic risks and non-carcinogenic effects, respectively, for the three hypothetical exposure scenarios. The potential unacceptable risks for a typical case exposure for each scenario are summarized below:

- No Future Use
  - -- Onsite cancer risks to the trespasser are unacceptable for dermal contact with the existing building floors and for indoor vapor inhalation in the existing buildings. Unacceptable non-carcinogenic effects result from the same pathways.

  - -- Cancer risks to the offsite resident are unacceptable for vegetable and beef ingestion, dermal contact with sediment, and outdoor vapor inhalation. Unacceptable non-carcinogenic effects are limited to beef ingestion.

- Industrial Development
  - -- Cancer risks to the future onsite industrial worker are unacceptable for dermal contact with the existing building floors and walls and for indoor vapor inhalation. The unacceptable non-carcinogenic effects are due to dermal contact with the floors and indoor vapor inhalation.

- Residential Development
  - -- Cancer risks are unacceptable to the future onsite resident for vegetable ingestion, dermal contact with sediment, indoor vapor inhalation and for child soil ingestion. The unacceptable non-carcinogenic effects are due to the indoor vapor inhalation pathway.

Information regarding the site has been provided to an appropriate natural resources trustee. As of the date of issuance of this Record of Decision, the preliminary natural resource damage assessment has not been completed.

Actual or threatened releases of hazardous substances from this site, if not addressed by implementation of the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

7.0 REMEDIAL ACTION OBJECTIVES

Remedial action objectives define the allowable exposures to compounds of interest found in the various media at the Rose site. The EA concluded for all scenarios that the contaminants found at the Rose site posed no known risks to terrestrial wildlife, livestock, terrestrial vegetation, or aquatic life. Therefore, the remedial action objectives are based on human health risks and hazards only, including ingestion of contaminated beef and dermal contact. The compounds of interest

include only PCBs and VOCs. The objectives addressing PCBs for each media of interest will also address human health risks and hazards for VOCs.

The following media of interest were selected based on the EA findings:

- Site soils.
- Sediments.
- Site buildings.
- Surface waters.
- Offsite soils.
- Ground water

7.1 SITE SURFACE SOILS REMEDIAL ACTION OBJECTIVES

The remedial action objectives for onsite soils for human health effects are: to prevent exposure to levels of contamination in surface soils that fall outside of the acceptable risk range for excess cancer risk in typical exposures for the pathways of soil ingestion and ingestion of vegetables grown on the site; to comply with chemical-specific applicable or relevant and appropriate requirements (ARARs); and to comply with other criteria to be considered (TBCs), including the PCB Spill Cleanup Policy which, for the residential scenario, requires preventing exposure to onsite soils with PCB concentrations greater than 10 ppm.

7.2 SITE SUBSURFACE SOILS REMEDIAL ACTION OBJECTIVES

The remedial action objectives for onsite subsurface soils are: to prevent exposure to levels of contamination in subsurface soils that fall outside of the acceptable risk range for excess cancer risk in typical exposures for the pathway of indoor vapor inhalation; and to comply with ARARs and TBCs, including the PCB Spill Cleanup Policy which, for the residential scenario, requires preventing exposure to subsurface soils with PCB concentrations greater than 10 ppm.

7.3 OFFSITE SURFACE SOILS REMEDIAL ACTION OBJECTIVES

Current conditions are protective of human health and no ARARs or TBCs were identified. Therefore, no remedial action is required for offsite surface soils.

7.4 SEDIMENTS REMEDIAL ACTION OBJECTIVES

The remedial action objectives for human health effects due to sediments in East Pin Oak Creek and the unnamed tributary are: to prevent ingestion of sediments by beef cattle that could eventually be consumed by humans; to prevent human dermal exposure to sediments containing PCBs at levels that fall outside

of the acceptable risk range for excess cancer risks; and, for compliance with chemical-specific ARARs and TBCs, to prevent exposure to sediments which have PCB concentrations greater than 10 ppm in non-restricted access areas.

7.5 BUILDINGS AND STRUCTURES REMEDIAL ACTION OBJECTIVES

Remedial action objectives for human health effects due to exposure to buildings and structures were developed. One objective is to prevent inhalation of vapors and to prevent direct contact with levels of contamination on the walls and floors that fall outside of the acceptable risk range for excess cancer risks from PCBs and that would result in unacceptable adverse non-carcinogenic effects (MDD/RfD>1.0) in typical exposures. In order to comply with chemical-specific ARARs and TBCs, the objective is to prevent exposure to building surfaces with PCB concentrations greater than 10 $\mu g/100\ cm^2$, the level established by the PCB Spill Cleanup Policy.

7.6 SURFACE WATERS REMEDIAL ACTION OBJECTIVES

All surface waters involved in response activities will be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water will be land-applied onsite or be discharged to area tributaries, creeks or streams. The treated water will meet Clean Water Act discharge limitations established by EPA or MDNR prior to discharge.

7.7 GROUND WATER REMEDIAL ACTION OBJECTIVES

The National Contingency Plan at 40 C.F.R. § 300.430(a)(iii)(F) states "EPA expects to return usable ground waters to their beneficial uses whenever practicable,..." At this site, there is little or no potential beneficial use of the shallow ground water. At present, and prior to the discovery of contamination on the site, no use was being made of the shallow ground water. Since the shallow ground water discharges into the unnamed tributary, future monitoring of the shallow ground water will determine future improvements in the ground water quality resulting from the removal of the source of contamination, as well as identify any future unforeseen degradation of the deep or shallow ground water, which might result in recontamination of the adjacent unnamed tributary and/or East Pin Oak Creek.

8.0 DESCRIPTION OF ALTERNATIVES

The remedial alternatives evaluated in detail in the FS report are described in the following subsections and are set forth in the chart at the end of this section. These descriptions identify engineering components, institutional controls, implementation requirements, estimated costs, and ARARs associated with each alternative.

For each alternative which involves the removal of PCB-contaminated material, the FS evaluated three disposal options. They are: the offsite landfilling of all removed PCB-contaminated wastes; the offsite incineration of all removed PCB-contaminated wastes; and the onsite incineration of all removed PCB-contaminated wastes. In describing each alternative, references to landfilling mean an offsite TSCA approved chemical waste landfill and references to incineration mean facilities meeting the requirements of the PCB regulations for incinerators. Under each alternative, the present worth cost and implementation time for each disposal option are presented here as set forth in the FS.

8.1 ALTERNATIVE 1: NO ACTION

The NCP requires the no action alternative be evaluated for every site. The no action alternative at the Rose site consists of: extending the existing perimeter fence to enclose a portion of the unnamed tributary; the posting of warning signs; and instituting deed restrictions prohibiting future use of or access to the site. All deed restrictions, discussed under this and all other alternatives, would necessarily have to be implemented by site's property owner; currently the City of Holden, Missouri. No ground water monitoring would be conducted under the no action alternative.

Because this alternative would result in contaminants remaining onsite, CERCLA would require that the site be reviewed every five years. If justified by the review, remedial actions would be implemented at that time to remove and dispose or treat the wastes.

The present worth cost of this alternative for a 30-year period is approximately $81,000, assuming no action resulted from EPA's five-year review. The time required to implement this alternative is 2 months.

8.2 ALTERNATIVE 2: REMOVE STREAM PCB SEDIMENTS; CAP SITE

Under this alternative, stream sediments containing PCBs at concentrations greater than 0.18 ppm (the level determined in the RI to represent a threat to human health as the result of ingestion of beef that drink from the stream) would be excavated

from East Pin Oak Creek and the unnamed tributary and site soils which exceed 10 ppm PCBs would be capped. In addition, all building doors and openings would be boarded closed and the buildings would be fenced.

It is expected that approximately 826 cy of sediments would be removed from the unnamed tributary and East Pin Oak Creek and dewatered. Subsequent sampling and analysis will be conducted to confirm that remaining sediments do not exceed 0.18 ppm. The removed sediments would then be either incinerated (on- or offsite) or landfilled offsite. Any water removed from the tributary and the creek or their sediment, and any water from the onsite ponds or pits, would be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

The cap would be a multimedia cap consisting of two feet of compacted clay, a 40-mil synthetic liner, one foot of sand, a layer of filter fabric, and two feet of revegetated topsoil. The cap would cover approximately 71,000 square feet. Any soils which cannot practically be capped (such as those adjacent to buildings or property lines) would be excavated and either incinerated (on- or offsite) or landfilled offsite.

Monitoring of the shallow and deep ground water for PCBs, VOCs, and metals would be conducted for a 10-year period.

Deed restrictions would be implemented to prohibit any access to or use of the site, except for the installation of shallow ground water wells for ground water monitoring purposes.

The following table represents the total present worth (PW) cost and implementation time for all of the actions, including ground water monitoring, necessary to implement Alternative 2, with each of the three treatment or disposal options, as found in the Feasibility Study (FS):

ALTERNATIVE 2

Offsite Landfill Option

Capital Cost: $3,303,908
Annual O&M: $31,134
PW: $3,622,292
Months to Implement: 8

Offsite Incineration Option

Capital Cost: $9,744,742
Annual O&M: $31,134
PW: $10,063,126
Months to Implement: 38

Onsite Incineration Option

Capital Cost: $6,546,485
Annual O&M: $31,134
PW: $6,864,869
Months to Implement: 30

8.3 ALTERNATIVES 3A & 3B: REMOVE PCB SEDIMENTS; CAP OR REMOVE SITE SOILS; DECONTAMINATE BUILDINGS AND CONCRETE

Alternatives 3A and 3B would limit future use of the site to activities that would not disturb the soil cap or building encapsulation. These alternatives are the same as Alternative 2, except that the buildings' skin, structural members, and concrete would be cleaned using physical and chemical methods. In addition, site soils exceeding 10 ppm PCBs would be excavated under Alternative 3B.

It is expected that approximately 826 cy of sediments would be removed from the unnamed tributary and East Pin Oak Creek and dewatered. Subsequent sampling and analysis will be conducted to confirm that remaining sediments do not exceed 0.18 ppm. The removed sediments would then be either incinerated (on- or offsite) or landfilled offsite. Any water removed from the tributary and the creek or their sediment, and any water from the onsite ponds or pits, would be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

Under Alternative 3A, site soils with PCB concentrations greater than 10 ppm PCBs would be capped. Under Alternative 3B, site soils exceeding 10 ppm PCBs would be excavated and either incinerated (on- or offsite) or landfilled offsite. Under Alternative 3B, approximately 2,600 cy of soil would be removed. All excavated areas would be backfilled with a minimum of 10 inches of clean soil.

Under Alternatives 3A and 3B the building insulation would be removed and then treated or disposed of in the same manner as the site soils under Alternative 3B; the contaminated building structures would be steam cleaned and solvent washed. In both

these alternatives, areas of the concrete slabs which are heavily stained would be removed and treated by incineration or disposed of by landfilling. Estimates in the FS indicate that 202 cubic yards of concrete would be removed. The remainder of the slabs would be scarified, solvent washed, and finally encapsulated within an impervious coating.

Deed restrictions would prohibit any use of the site that would result in disturbance of the soil cap or building encapsulation. The deed restrictions may allow for restricted access future use of the site if the deed restrictions are complied with, but would prohibit future non-restricted access to the site. The deed restrictions would also prohibit the installation of shallow ground water wells for purposes other than monitoring.

Ground water monitoring would be conducted in the same manner as described for Alternative 2.

The following table represents the total present worth (PW) cost and implementation time for all of the actions, including ground water monitoring, necessary to implement Alternatives 3A and 3B, with each of the three treatment or disposal options, as found in the FS:

ALTERNATIVE 3A

Offsite Landfill

Capital Cost: $6,884,361
Annual O&M: $30,634
PW: $7,195,060
Months to Implement: 11

Offsite Incineration

Capital Cost: $14,458,679
Annual O&M: $30,634
PW: $14,769,378
Months to Implement: 45

Onsite Incineration

Capital Cost: $10,616,546
Annual O&M: $30,634
PW: $10,927,245
Months to Implement: 30

ALTERNATIVE 3B

Offsite Landfill

Capital Cost: $9,049,243
Annual O&M: $24,134
PW: $9,260,037
Months to Implement: 10

Offsite Incineration

Capital Cost: $22,574,593
Annual O&M: $24,134
PW: $22,785,387
Months to Implement: 83

Onsite Incineration

Capital Cost: $15,853,617
Annual O&M: $24,134
PW: $16,064,411
Months to Implement: 33

8.4 ALTERNATIVE 4: REMOVE PCB SEDIMENTS; CAP SITE SOILS AND CONCRETE; REMOVE BUILDINGS

Alternative 4 would limit future use of the site to activities that would not disturb the soil cap or building encapsulation. This alternative is similar to 3A, except that the buildings are to be removed and the cap would be extended to cover the concrete slabs.

It is expected that approximately 826 cy of sediments would be removed from the unnamed tributary and East Pin Oak Creek and dewatered. Subsequent sampling and analysis will be conducted to confirm that remaining sediments do not exceed 0.18 ppm. The removed sediments would then be either incinerated (on- or offsite) or landfilled offsite. Any water removed from the tributary and the creek or their sediment, and any water from the onsite ponds or pits, would be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

The buildings, except the concrete slabs, would be removed using conventional demolition equipment. The removed building materials would be disposed of in the same manner as the sediments.

The area to be capped would include site soils with PCB concentrations above 10 ppm and the concrete slabs. The cap would cover approximately 275,000 square feet.

Ground water monitoring would be conducted in the same manner as described for Alternative 2.

Deed restrictions would be the same as described in Alternatives 3A and 3B.

The following table represents the total present worth (PW) cost and implementation time for all of the actions, including ground water monitoring, necessary to implement Alternative 4, with each of three treatment or disposal options, as found in the FS:

ALTERNATIVE 4

Offsite Landfill Option

Capital Cost: $5,694,954
Annual O&M: $37,016
PW: $6,103,745
Months to Implement: 17

Offsite Incineration Option

Capital Cost: $13,975,620
Annual O&M: $37,016
PW: $14,384,411
Months to Implement: 54

Onsite Incineration Option

Capital Cost: $10,043,150
Annual O&M: $37,016
PW: $10,451,941
Months to Implement: 31

8.5 ALTERNATIVES 5A & 5B: REMOVE PCB SEDIMENTS; CAP OR REMOVE SITE SOILS; DECONTAMINATE BUILDINGS; REMOVE CONCRETE

Alternatives 5A and 5B would limit future use of the site to activities that would not disturb the soil cap. Alternatives 5A and 5B are the same as Alternatives 3A and 3B, respectively, except that under both Alternatives 5A and 5B the entire concrete slab from the Main Building and the South Warehouse and contaminated soil beneath each concrete slab would be removed.

It is expected that approximately 826 cy of sediments would be removed from the unnamed tributary and East Pin Oak Creek and dewatered. Subsequent sampling and analysis will be conducted to confirm that remaining sediments do not exceed 0.18 ppm. The removed sediments would then be either incinerated (on- or offsite) or landfilled offsite. Any water removed from the tributary and the creek or their sediment, and any water from the onsite ponds or pits, would be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

Under Alternatives 5A and 5B, the concrete slabs would be removed using conventional demolition techniques, leaving footings necessary for the structural integrity of the buildings. In Alternatives 5A and 5B, soils beneath the concrete slabs contaminated with greater than 10 ppm PCBs would be excavated and treated or disposed of in the same manner as the sediment. All excavated areas would be backfilled with a minimum of 10 inches of clean soil.

Under Alternative 5A, approximately 1034 cy of soil would be excavated and treated by incineration or disposed of by landfilling, and 71,000 square feet would be capped. Under Alternative 5B, approximately 4788 cy of soil would be removed

and treated by incineration or disposed of by landfilling, and no capping would be done. All excavated areas would be backfilled with a minimum of 10 inches of with clean soil.

Ground water monitoring would be conducted in the same manner as described for Alternative 2.

Deed restrictions would be the same as described in Alternatives 3A and 3B.

The following table represents the total present worth (PW) cost and implementation time for all of the actions, including ground water monitoring, necessary to implement Alternatives 5A and 5B, with each of the three treatment or disposal options, as found in the FS:

ALTERNATIVE 5A	ALTERNATIVE 5B
Offsite Landfill	**Offsite Landfill**
Capital Cost: $8,487,531	Capital Cost: $12,982,503
Annual O&M: $30,634	Annual O&M: $24,134
PW: $8,798,230	PW: $13,193,297
Months to Implement: 16	Months to Implement: 14
Offsite Incineration	**Offsite Incineration**
Capital Cost: $23,100,515	Capital Cost: $39,528,358
Annual O&M: $30,634	Annual O&M: $24,134
PW: $23,411,214	PW: $39,739,152
Months to Implement: 91	Months to Implement:148
Onsite Incineration	**Onsite Incineration**
Capital Cost: $15,342,108	Capital Cost:$26,112,947
Annual O&M: $30,634	Annual O&M: $24,134
PW: $15,652,807	PW: $26,323,741
Months to Implement: 34	Months to Implement: 40

8.6 ALTERNATIVE 6: REMOVE PCB SEDIMENTS, SITE SOILS, BUILDINGS AND CONCRETE

This alternative is similar to Alternative 3B, except that Alternative 6 removes the buildings and all concrete from the site instead of decontaminating them.

It is expected that approximately 826 cy of sediments would be removed from the unnamed tributary and East Pin Oak Creek and dewatered. Subsequent sampling and analysis will be conducted to confirm that remaining sediments do not exceed 0.18 ppm. The removed sediments would then be either incinerated (on- or

offsite) or landfilled offsite. Any water removed from the tributary and the creek or their sediment, and any water from the onsite ponds or pits, would be treated using activated carbon. Depending upon the concentration of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

Under this alternative, all soils with PCB concentrations greater than 10 ppm would be excavated and either treated by incineration or disposed by landfilling. Under Alternative 6, approximately 4788 cy of soil would be excavated. All excavated areas would be backfilled with a minimum of 10 inches of clean soil.

The FS indicates that these actions, along with a deed restriction requiring the placement of 10 inches of clean soil between the existing site soils and all surfaces of below ground structures (i.e., basements) constructed on the site, would allow future residential use of the site. The EPA has determined that implementation of Alternative 6 would allow the site to be considered a non-restricted access area. Additional restrictions for residential development are not necessary. However, deed restrictions would be required for this alternative prohibiting the installation of shallow ground water wells for purposes other than monitoring.

Under Alternative 6, the building insulation would be removed and then either treated by incineration or disposed of by landfilling. The building structures would be removed and either cleaned and scraped or sent to landfill or incinerated. The concrete slabs would be completely removed and either treated by incineration or disposed of by landfilling.

Ground water monitoring would be conducted in the same manner as described for Alternative 2.

The following table represents the total present worth (PW) cost and implementation time for all of the actions, including ground water monitoring, necessary to implement Alternative 6, with each of the three treatment or disposal options, as found in the FS:

ALTERNATIVE 6

Offsite Landfill Option

Capital Cost: $12,368,962
Annual O&M: $22,734
PW: $12,558,238
Months to Implement: 12

Offsite Incineration Option

Capital Cost: $41,523,787
Annual O&M: $22,734
PW: $41,713,063
Months to Implement: 154

Onsite Incineration Option

Capital Cost: $25,564,840
Annual O&M: $22,734
PW: $25,754,116
Months to Implement: 41

ALTERNATIVE REMEDIAL ACTIONS

IDENTIFIED IN FEASIBILITY STUDY

	SOILS & POND SEDIMENT	CREEK SEDIMENT	BUILDING	CONCRETE SLAB	GROUND WATER	FUTURE USE
ALT 1	NO ACTION	NO ACTION	FENCE & BOARD UP	NO ACTION	NO ACTION	NO ACCESS OR USE
ALT 2*	CAP* > 10 PPM	REMOVE[4]	FENCE & BOARD UP	NO ACTION	MONITOR FOR 10 YEARS	NO ACCESS OR USE
ALT 3A	CAP > 10 PPM	REMOVE	REMOVE INSULATION & CLEAN	CLEAN & CAP OR REMOVE	MONITOR FOR 10 YEARS	INDUSTRIAL ONLY NO WELLS
ALT 3B	REMOVE > 10 PPM	REMOVE	REMOVE INSULATION & CLEAN	CLEAN & CAP OR REMOVE	MONITOR FOR 10 YEARS	INDUSTRIAL ONLY NO WELLS
ALT 4	CAP > 10 PPM	REMOVE	REMOVE, EXCEPT CONCRETE SLAB	CAP	MONITOR FOR 10 YEARS	INDUSTRIAL ONLY NO WELLS
ALT 5A	CAP > 10 PPM	REMOVE	REMOVE INSULATION & CLEAN FRAMEWORK	REMOVE	MONITOR FOR 10 YEARS	INDUSTRIAL ONLY NO WELLS
ALT 5B	REMOVE > 10 PPM	REMOVE	REMOVE INSULATION & CLEAN FRAMEWORK	REMOVE	MONITOR FOR 10 YEARS	INDUSTRIAL ONLY NO WELLS
ALT 6	REMOVE > 10 PPM	REMOVE	REMOVE	REMOVE	MONITOR FOR 10 YEARS	UNRESTRICTED EXCEPT NO WELLS

[2]Except for Alternative 1, pond surface water will be removed and treated in all alternatives prior to land application or discharge.

[3]In each capping alternative, soil removal would occur in certain areas where capping is not feasible or practicable and removed soil would be disposed of offsite or placed under the cap.

[4]In each alternative, removal would include disposal either by on- or offsite incineration or offsite landfilling. Sediments would be dewatered prior to disposal.

9.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

Alternative remedial actions were developed to respond to the contamination at the Rose site. The alternatives described in the preceding section were evaluated using criteria related to factors set forth in Section 121 of CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The nine criteria are described below.

Threshold Criteria:

- Overall Protection of Human Health and the Environment. This criterion addresses whether a remedy provides adequate protection to human health and the environment and describes how risks from each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

- Compliance With ARARs. This criterion addresses whether a remedy will comply with chemical-specific, action-specific and location-specific ARARs and with other criteria, advisories and guidances (TBCs), or provide grounds for a waiver.

Primary Balancing Criteria:

- Long-Term Effectiveness and Permanence. This criterion refers to the magnitude of residual risk, including the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met, and the adequacy and reliability of engineering and institutional controls.

- Reduction in Toxicity, Mobility, and Volume through Treatment. This criterion assesses the anticipated performance of the treatment technologies that may be employed in a remedy.

- Short-Term Effectiveness. This criterion refers to the speed with which the remedial response objectives are achieved, as well as the remedy's potential to have adverse impacts on human health and the environment during the construction and implementation periods.

- Implementability. This criterion assesses the technical feasibility for constructing and operating a remedy; the technical and administrative reliability of a remedy, including the availability of materials and services needed to implement the chosen remedy; and the ease of undertaking additional response action, if necessary.

- Cost. This criterion includes the capital, operation and maintenance (O&M), and present worth cost of a remedy.

Modifying Criteria:

- State Acceptance. This criterion assesses whether, based on its review of the RI/FS and Proposed Plan, the State concurs, opposes, or declines to comment on the preferred alternative.

- Community Acceptance. This criterion assesses the degree of community acceptance of a remedy. The degree of community acceptance can generally be determined as a result of a review of comments received during the public comment period.

9.1 OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

All of the alternatives, except Alternative 1, protect human health and the environment by either preventing exposure to PCB materials or by removing them. Except for Alternative 1, each of the alternatives includes the removal of PCB sediments from East Pin Oak Creek and its unnamed tributary, thus eliminating that exposure pathway to offsite residents. Alternatives 2 through 6 address the PCB materials remaining onsite by a variety of methods. These methods include complete removal, partial removal, decontamination, capping, institutional controls and fencing.

Alternative 6 provides the greatest overall protection by removing all contaminated materials considered to be a health risk, including: all stream and onsite pond sediments; all soils contaminated with greater than 10 ppm PCBs; and the Main Building and the South Warehouse, including the concrete floor slabs. Under this alternative, PCB-contaminated soil would be excavated and the 10-inch cover of clean soil would be placed over the entire eastern portion of the site, including all excavated areas. Implementation of Alternative 6 eliminates potential risks to human health and the environment through each pathway of exposure, while the other alternatives (except for Alternative 5B) only reduce or control potential risks with respect to one or more pathways of exposure. In addition, when compared to the other alternatives, removal of the contaminated materials under Alternative 6 would to a greater degree reduce the risk of potential degradation of the deep ground water and further degradation of the shallow ground water, which recharges the unnamed tributary on the southwestern portion of the site. Implementation of Alternative 6 reduces the chances that future response actions would be necessary to address recontamination of this tributary or adjoining surface waters.

When compared to Alternative 6, the other alternatives (except Alternative 5B) provide less assurances that risks are eliminated, reduced or controlled. The significant difference between Alternatives 5B and 6 is that the building structures' skin and framework are decontaminated and left onsite under Alternative 5B, while they are removed from the site under Alternative 6. Except for Alternative 5B and 6, the other alternatives allow significant amounts of contaminated materials to remain onsite with either a multimedia cap over site soils or encapsulation of the concrete floors in site buildings. There is the potential for the multimedia cap or encapsulation to fail or to be breached as a result of site activities, thereby creating a potentially unacceptable health hazard.

Except for Alternative 1, human health risks through each pathway are eliminated, reduced or controlled through a combination of the actions specified for each alternative and institutional controls (in the form of deed restrictions). In regard to deed restrictions, the FS indicates that implementation of Alternative 6 would allow future residential use of the site with minor deed restrictions requiring the placement of a minimum 10-inch layer of clean soil beneath and around any structure to be built onsite. EPA has determined that implementation of Alternative 6 would allow the site to be considered a non-restricted access area and no further restrictions on residential development would be required. As for all alternatives, deed restrictions would be required for Alternative 6 prohibiting the installation of shallow ground water wells for purposes other than monitoring. Implementation of Alternatives 3 through 5 would require deed restrictions prohibiting any site activity that would result in the disturbance of the soil cap and/or the building encapsulation. These deed restrictions may allow for restricted access future use of the site if the deed restrictions are complied with, but would not allow future non-restricted use of the site. Implementation of Alternatives 1 and 2 would prohibit any future use of or access to the site.

Alternative 2 provides less human health protection than Alternatives 3 through 6, leaving most of the materials containing PCBs onsite. This alternative does not achieve the point of departure risk levels for a trespasser. In addition, achievement of point of departure risk level for the offsite resident under Alternative 2 is dependent on maintenance of the buildings in a tight, boarded-up condition. Alternative 1 provides no protection to human health, other than deterring site access through fencing.

9.2 COMPLIANCE WITH ARARs

During preparation of the FS, the RCSC conducted a review of federal, state and local laws, regulations and policies to identify potential ARARs. Other criteria or policies to-be-considered (TBC) were also evaluated by the RCSC for application to the site. The RCSC's evaluations of potential chemical-specific, action-specific, and location-specific ARARs and the TBCs are set forth in Appendix B of the FS.

Subsequent to the evaluation of potential ARARs and TBCs in the FS, EPA issued a guidance document, published on August 15, 1990, entitled "Guidance on Remedial Actions for Superfund Sites With PCB Contamination" (OSWER Directive No. 9355.4-01). Along with other criteria and policies, guidance documents are potential TBCs in developing and evaluating alternative remedial actions at Superfund sites. Region VII has determined that this guidance document is a relevant TBC for determining the appropriate disposal method for PCB-contaminated materials at the Rose site. Specifically, this guidance indicates that PCBs in soil and debris at concentrations of 100 ppm or greater at sites in residential areas and PCBs at concentrations of 500 ppm or greater at sites in industrial areas generally will constitute a principal threat. Consistent with NCP expectations, principal threats at Superfund sites should be treated where practicable. Treatment of principal threats can occur onsite or offsite.

The FS states on page B-6 that "Hazardous waste regulations in general are not considered applicable because the concentration of TCLP parameters in site soils to be removed never exceed 20 times the regulatory level of these parameters found in 40 C.F.R. § 261.24 based on all soil analytical data obtained to date." However, of the different media sampled during the RI, it appears that samples of surface soils and building components (floors, walls and ceilings) were only analyzed for PCBs. Therefore, the hazardous waste regulations may be an ARAR if the additional sampling and analysis that must be conducted during the implementation of the selected remedy indicates the presence of hazardous wastes in the various media to be remediated. If this sampling and analysis indicates a contaminant of concern must be considered a hazardous waste, the EPA and State hazardous waste regulations will be ARARs for Site remedial actions. Specific ARARs would include: 1) Federal Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities, 40 C.F.R. Part 264, and the equivalent State standards; 2) Federal Standards Applicable to Transporters of Hazardous Wastes, 40 C.F.R. Part 263, and the equivalent State standards; and 3) Federal Land Disposal Restrictions, 40 C.F.R. Part 268.

In addition to the State ARARs identified in the Tables in Appendix B of the FS, the State of Missouri has identified the following chemical-specific and action-specific ARARs: 1) the Missouri Hazardous Waste Management Regulations at 10 C.S.R. Chapter 25, Standards for Transporters of Hazardous Wastes; 2) Missouri Air Quality Standards and Air Pollution Control Regulations at 10 C.S.R. Chapter 10-6; and 3) Missouri Solid Waste Management Regulations at 10 C.S.R. Chapter 80, Standards for Management of Solid Waste Disposal Practices.

Except for Alternative 1, all the alternatives would involve treatment of surface waters. Surface waters requiring treatment under the alternatives include: 1) water generated as a result of sediment removal from the unnamed tributary and East Pin Oak Creek; 2) water from the four storm water and spill containment ponds; and 3) water from the concrete pit in the Main Building. The FS indicates that surface waters involved in response actions would be treated using activated carbon, and then land-applied onsite or discharged to the unnamed tributary or the Holden POTW. Treated water will necessarily have to be sampled prior to discharge to the unnamed tributary or the Holden POTW to ensure compliance with the requirements of the Clean Water Act, its implementing regulations and State of Missouri standards or limitations, including Missouri Water Quality Standards at 10 C.S.R. 20-7.031. The Missouri Department of Natural Resources may establish the specific discharge limitations for treated water during remedial design. If discharge is to the Holden POTW, any pretreatment requirements contained in the City of Holden's city sewer ordinance will have to be met prior to discharge. A permit may be required prior to discharge to area creeks or streams depending upon the discharge point. This determination will be made during remedial design.

Alternative 1 would not meet ARARs or TBCs. Only Alternatives 3B (if the concrete in the buildings is decontaminated or removed and treated to below appropriate levels), 5B and 6, assuming use of the onsite or offsite incineration options, would meet all their respective ARARs or TBCs.

9.3 LONG-TERM EFFECTIVENESS AND PERMANENCE

Among all the alternatives, Alternative 6 provides the most certainty with respect to long-term effectiveness and permanence by removing over 80 percent of the PCBs remaining at the site and placing a soil cover over the entire eastern portion of the site. Under this alternative, the site would be considered a non-restricted access area. Institutional controls, in the form of deed restrictions, prohibiting use of the shallow ground water for purposes other than monitoring will be adequate and reliable.

Alternative 4 provides long-term effectiveness and permanence by controlling exposure to PCBs; removing all above-ground structures; and capping soils, sediments, and exposed concrete slabs. However, the permanence of this alternative is less certain than Alternative 6 because it is dependent upon the maintenance of the soil cap and concrete encapsulation.

Alternatives 3A, 3B, 5A and 5B limit future use of the site to activities that would not disturb or breach the soil cap and/or the building encapsulation because materials containing significant concentrations of PCBs remain onsite. There are more uncertainties associated with the decontamination and encapsulation technologies used in these alternatives to clean the buildings and concrete. There are also uncertainties associated with the potential for the breaching of the soil cap or encapsulated concrete, thereby resulting in potential future exposure to PCBs at levels that may represent an unacceptable human health risk.

Alternatives 5A and 5B both involve cleaning of the buildings and removal of the concrete slabs. With Alternative 5B, only PCB soils with less than 10 ppm total PCBs are left onsite; with Alternative 5A, the PCB soils (greater than 10 ppm) are primarily capped (with selective removal of outlying PCB soils). Consequently, because Alternative 5A leaves PCB-contaminated material onsite with a cap over it, Alternative 5B has greater certainty with respect to long-term effectiveness and permanence than 5A.

Alternatives 3A and 3B are similar to Alternatives 5A and 5B, in that both involve capping or removal of PCB soils and decontamination of the buildings. Alternatives 3A and 3B involve decontamination and encapsulation of the concrete slabs. Alternatives 5A and 5B involve the removal of the concrete slabs and PCB-contaminated soil beneath. Alternatives 3A and 3B have less certainty with respect to long-term effectiveness and permanence than Alternatives 5A and 5B because Alternatives 3A and 3B allow a greater amount of contaminated material to remain onsite.

Alternative 2 would not allow for future access or use of the site because this alternative leaves a significant amount of PCB-contaminated materials (soils and buildings) onsite. Although contaminated site soils above 10 ppm would be capped, the buildings would remain in their current condition, but boarded-up. Thus, the magnitude of the residual risk under this alternative remains significant. The ability of this alternative to maintain reliable protection of human health and the environment is uncertain; therefore, considerable less long-term effectiveness and permanence would result from the implementation of this alternative.

Alternative 1 would not allow for future access or use of the site because this alternative leaves all materials (soils, sediments and buildings) containing PCBs onsite. The magnitude of the residual risk would remain significant. This alternative would not provide protection of human health or the environment.

9.4 REDUCTION IN TOXICITY, MOBILITY, AND VOLUME THROUGH TREATMENT

Except for Alternative 1, all the alternatives provide some level of treatment. Alternatives 2 through 6 treat surface water which is generated during sediment removal (estimated 70,300 gallons) or from onsite ponds (estimated 545,000 gallons) using activated carbon. The activated carbon reduces the volume of contaminated material and reduces the mobility of the PCBs. After the carbon is spent, the carbon filter is regenerated by subjecting the filter to high temperature treatment in which the PCBs are destroyed. Depending upon the level of contaminants that may remain following treatment, the water would be discharged to the unnamed tributary onsite, land-applied onsite, or discharged to the Holden POTW.

Alternatives 2 through 6 also contain the option of disposing of the excavated soils and sediments and other debris by offsite landfilling or incineration (on- or offsite). If incineration is chosen as the treatment method, over 99.9999 percent of PCBs are destroyed. The treatment residual, incinerator ash, may be disposed as a solid waste once it is demonstrated that it is no longer considered to be a hazardous waste. The volume of non-hazardous ash from incinerating soil, concrete, and building materials will be nearly 100 percent of the original volume.

Landfilling of all PCB-contaminated material does not meet the statutory preference for treatment. However, disposal of the PCB materials in a TSCA secure landfill reduces their mobility by isolating the materials from the environment to a greater extent than capping. A TSCA landfill has bottom liners and leachate recovery as well as surficial protection.

9.5 SHORT-TERM EFFECTIVENESS

Protection of the community and site workers during remedial actions, environmental impacts, and the length of time to implement the remedial action objectives are factors that are considered in evaluating the short-term effectiveness of an alternative.

For the Rose site, the short-term effectiveness is dependent upon the level of onsite construction activities and the chosen disposal option. Within each alternative, the choice of treatment/disposal option mainly affects implementation time. The options discussed in the FS can be ranked in order of

increasing implementation times as follows: landfilling, onsite incineration, and offsite incineration. In general, an alternative using the offsite landfill disposal option would have greater short-term effectiveness than an alternative with the onsite incineration disposal option, simply because once the material is transported offsite it no longer has any effect at the site. In turn, an alternative with the offsite incineration disposal option could have the least short-term effectiveness because this option may require long-term onsite storage of the PCB material while awaiting incinerator capacity.

The greatest short-term effectiveness is achieved by Alternative 1, since the only response actions that would take place would be: extending the perimeter fence to enclose a portion of the unnamed tributary; the posting of signs; and instituting deed restrictions to prohibit use of the site. These minimal response actions would have no or very little impact on human health and the environment as a result of construction or implementation activities. However, the risk that would remain to human health and the environment would be significant and would not meet remedial action objectives. Among the other alternatives, Alternative 2 provides the next greatest short-term effectiveness since it involves the least amount of activities onsite which could cause dust or vapor emissions and because the time estimated to perform the limited amount of work required is less than the other response action alternatives. During implementation of any of the response action alternatives, control measures would be instituted to mitigate any short-term risk to the community or site workers from dust or vapor emissions. The remaining alternatives have progressively higher short-term health risks associated with them because of their level of construction activities, and the length of time required to carry out the response action. Alternative 6, with the disposal option of incinerating all contaminated material offsite, could afford the least short-term effectiveness because of potential delays in shipping material to the incineration facility due to a lack of capacity at the facility.

9.6 IMPLEMENTABILITY

Alternative 1 is the easiest alternative to implement in that it requires very little construction (boarding-up the building and fencing the site) and is unlikely to be delayed by technical problems. Under this alternative, future response actions would likely be necessary. Present availability of personnel and equipment to implement Alternative 1 would not be a problem.

To remediate the site, the other alternatives use various combinations of conventional excavation and/or demolition technologies and multi-media cap and/or decontamination and encapsulation technologies. In general, the conventional excavation and/or demolition technologies are less difficult to

implement. The multi-media soil cap and the decontamination and encapsulation technologies for the buildings and concrete both require specialized equipment and personnel. In addition, the existence of a multi-media cap over site soils would adversely affect the ease of undertaking future response actions, if determined to be necessary. Such future actions could damage the cap.

Alternative 6 utilizes only conventional excavation and demolition technologies to remove site soils and buildings and concrete. Because no multi-media cap or encapsulation is involved, no specialized equipment or techniques are required as would be for encapsulation or membrane placement required by other alternatives. Implementation of Alternative 6 would not unduly restrict the implementation of additional response actions, if necessary. Alternative 6 would be the most desirable alternative with respect to implementability.

Alternative 2 would also be easy to implement in that it involves only conventional excavation technology for the sediment removal. As in Alternative 1, future response actions would likely be required at the site under Alternative 2.

Alternative 4 does not involve decontamination and encapsulation technologies, but does include a multi-media cap over soil and concrete, thereby increasing the difficulty for implementing future response actions, if necessary.

The remaining alternatives each utilize a multi-media cap and/or decontamination and encapsulation technologies making them less desirable from an implementability standpoint.

9.7 COST

Alternative 1 is the least expensive alternative to implement at $81,000. The cost of each of the other alternatives presented is dependant upon which of the three disposal options is chosen for that alternative, either offsite incineration, onsite incineration, or offsite landfilling. According to the FS, offsite incineration is generally 2 to 3 times as expensive as offsite landfilling. Onsite incineration is less expensive than offsite incineration (assuming all material is incinerated), but more expensive than landfilling. The ranking of the lowest cost action alternative within the FS, ranges from the least expensive action alternative, Alternative 2 (offsite landfilling) at $3,600,000, to the most expensive option of Alternative 6 (offsite incineration) at $41,700,000.

The following table represents the total present worth cost of each of the alternatives as presented in the FS, and includes both capital costs and present worth operation and maintenance costs.

ALTERNATIVE	LANDFILL	OFF SITE INCINERATION	ON SITE INCINERATION
1.	$ 81,590	--	--
2.	$3,622,292	$10,063,126	$6,864,869
3A.	$7,195,060	$14,769,378	$10,927,245
3B.	$9,260,037	$22,785,387	$16,064,411
4.	$6,103,745	$14,384,411	$10,451,941
5A.	$8,798,230	$23,411,214	$15,652,807
5B.	$13,193,297	$39,739,152	$26,323,741
6.	$12,558,238	$41,713,063	$25,754,116
6. ASH	HANDLED	ON SITE	$18,296,615

9.8 STATE ACCEPTANCE

MDNR feels residential use should be prohibited at the site.

9.9 COMMUNITY ACCEPTANCE

Community acceptance is specifically addressed in the attached Responsiveness Summary. The Responsiveness Summary provides a thorough review of the significant public comments received on the RI/FS and the Proposed Plan, and EPA's responses to the comments. The community has expressed support for the remedy selected as described in the Proposed Plan.

10.0 SELECTED REMEDY

Based upon consideration of the requirements of CERCLA and the NCP, the evaluation of the relative performance of each alternative with respect to the nine criteria, and consideration of comments received during the public comment period, EPA has determined that a modified Alternative 6 is the selected remedy. This selected remedy includes: a combination of disposal and treatment methods[5]; deed restrictions prohibiting the installation of shallow ground water wells for purposes other than monitoring; and a minimum ten-year ground water monitoring program. While the selected remedy specifically addresses PCB contamination, EPA has determined, based upon current information, the remedy will also address the VOC contamination identified at the site.

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[5]The treatment technology chosen in this Record of Decision is incineration. Other technologies may be considered in lieu of or in combination with incineration during remedial design if they meet the criteria set forth in this Record of Decision.

Note that prior to the land disposal of any contaminated material, a determination will have to be made as to the applicability of the RCRA land disposal restrictions in 40 C.F.R. Part 268. The selected remedy is more fully described as follows:

- Excavation and offsite disposal of tributary and stream sediments containing PCBs equal to or greater than 0.18 ppm in a TSCA chemical waste landfill. It is not anticipated that any sediment will constitute a principal threat at the Rose site. If it does, it will be disposed of in the same manner as soils deemed to represent a principal threat.

- Excavation and offsite disposal in a TSCA chemical waste landfill of onsite soils containing PCBs at or greater than 10 ppm but not considered to be a principal threat. A minimum of ten inches of soil will be removed from all excavated areas. Post-excavation sampling will be conducted.

- Excavation and offsite incineration at a TSCA approved incinerator of soils that contain PCBs which are considered to represent a principal threat.

- Dismantling of the Main Building and South Warehouse, including floor slabs and insulation, and the offsite disposal in a TSCA chemical waste landfill of the debris which can be demonstrated to be contaminated with less than 2,500 ppm PCBs. The metal components and interior partitions of the buildings that can be decontaminated to below 1 ppm can be salvaged or disposed of as solid wastes.

- Offsite incineration of debris from the building structures that is contaminated in excess of 2,500 ppm PCBs at a TSCA approved incinerator.

- Following post-excavation sampling, backfilling all excavated areas with clean soil and bringing to grade. At a minimum, a 10-inch thick layer of clean material will be placed over all excavated areas.

- Ground water monitoring for a minimum 10-year period, to be extended upon the occurrence of certain events including, but not limited to: analytical data indicating a significant increase in the levels of contamination in the shallow or deep ground water; or analytical data indicating significant fluctuations in contaminant levels between sampling events. The number

and location of ground water monitoring wells and the frequency of sampling and analysis will be established in the remedial design work plan.

- Deed restrictions (to be implemented by the current owner of the site property) prohibiting the installation of wells in the shallow ground water for purposes other than monitoring.

The following is an expanded description of the selected remedy in terms of the media affected:

A) STREAM SEDIMENT

All stream sediment contaminated at levels equal to or greater than 0.18 ppm is to be removed and disposed of in an approved TSCA chemical waste landfill.

Once verification sampling confirms that all sediment equal to or greater than 0.18 ppm has been removed, the stream beds will be backfilled with sand and gravel to restore the stream to the previous conditions.

B) SOIL

All site soil having PCBs at levels greater than or equal to 10 ppm will be excavated. Excavation will be a minimum of ten inches. The soil with PCB contamination at or greater than 10 ppm but not constituting a principal threat at the site will be disposed in an approved TSCA chemical waste landfill. Soils containing PCBs which constitute a principal threat will be incinerated.

All areas from which soil is excavated will be covered with at least ten inches of clean fill material. The entire eastern portion of the site will be covered with at least ten inches of clean fill material. This includes all areas east of the western most excavated area.

C) BUILDING STRUCTURES

The Main Building and the South Warehouse will be dismantled and all debris will be removed. All of the materials contaminated at levels eater than 10 $\mu g/100\ cm^2$ will be either disposed of in an approved TSCA chemical waste landfill or decontaminated and sold for scrap. Any material not sent to an approved TSCA chemical waste landfill will be sampled to verify that it is not contaminated prior to being sold as scrap or disposed of as solid waste. The residues

of any decontamination process will be disposed of in a manner approved specifically by EPA in accordance with TSCA, RCRA and any other applicable law.

D) CONCRETE SLABS

The concrete slabs supporting the two buildings have been found to be contaminated with PCBs. The concrete slabs will be removed in their entirety. Concrete that is contaminated at levels between 10 and 2,500 ppm will be disposed of in an approved TSCA chemical waste landfill. Concrete contaminated with PCBs in excess of 2,500 ppm will be incinerated.

E) GROUND WATER

A ground water monitoring program will be designed and implemented for the site. Ground water monitoring is a necessary component of the remedy to ensure that the contaminated shallow ground water, which recharges to the unnamed tributary on the southwestern portion of the facility property, does not recontaminate surface waters in the vicinity of the site.

A ten year period will be the base period for which the monitoring plan will be designed and implemented. The ground water monitoring plan will be designed specifically with the purpose of monitoring for any change in the quality of the shallow or deep ground water in the vicinity of the site. Ground water monitoring will be extended beyond ten years upon the occurrence of certain events including, but not limited to: analytical data indicating a significant increase in contaminant levels; or analytical data indicating significant fluctuations in contaminant levels between sampling events. The number and location of the ground water monitoring wells and the frequency of sampling and analysis will be established in the remedial design work plan.

The ground water monitoring plan will include provisions to deal with unexpected contingencies. The major contingencies which can be anticipated, although not expected, are further degradation of the shallow ground water necessitating additional response actions, or contamination being found in the deep ground water. Specific actions appropriate to changed conditions will be incorporated in the ground water monitoring plan. Specific references to actions necessary to respond to conditions which will require stream sediment surface water sampling will be included.

COST AND TIME ESTIMATE

Subsequent to publication of the FS, EPA undertook a survey of offsite incineration facilities to determine the costs of incinerating the PCB-contaminated materials found at the Rose site and to determine the time necessary to incinerate those materials. This survey documents some cost and time estimates at variance with those stated in the FS. Both cost and implementation time varied among incineration facilities. Although there are a number of variables which will influence both the cost and time to implement the selected remedy, EPA has estimated it will cost $13,600,000 and, except for ground water monitoring, take approximately 15 months to complete the remedy. Appendix A contains the general results of the cost analysis for the various disposal options for Alternative 6.

INSTITUTIONAL CONTROLS

The preferred remedy in the Proposed Plan would have required deed restrictions prohibiting the construction of residential structures. However, the PCB Spill Cleanup Policy establishes a cleanup level of 10 ppm for unrestricted access areas, a level that provides risk reduction within the acceptable range established in the NCP. Therefore, since the selected remedy in this Record of Decision would require the excavation and offsite treatment or disposal of all soils contaminated at and above 10 ppm PCBs, EPA has determined that the only deed restriction necessary for this site is to prohibit the installation of shallow ground water wells for purposes other than monitoring.

11.0 STATUTORY DETERMINATIONS

Under its legal authority, EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve adequate protection of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action for this site must comply with ARARs unless a statutory waiver is justified. The selected remedial action must also be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatments that permanently and significantly reduce the volume, toxicity, or mobility of the hazardous waste as their principal element. The following subsections discuss how the selected remedy for the Rose site meets these statutory requirements.

11.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy protects human health and the environment through excavation of PCB sediments, PCB soils, removal of the structures and concrete slabs, treatment of highly contaminated materials in an offsite incinerator, and landfilling of moderately contaminated materials.

Removal and treatment of the PCB materials will eliminate the threat of exposure to the contaminants. Implementation of the selected remedy will not pose any unacceptable short-term risks or cross-media impacts to the site, the workers, or the community.

11.2 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The selected remedy complies with federal and state ARARs. The following subsections describe the ARARs and TBCs which will be met and/or complied with during implementation of the selected remedy.

11.2.1 Action-Specific ARARs

Action-specific ARARs include the following:

- National Primary and Secondary Ambient Air Quality Standards (40 C.F.R. Part 50).
- State Air Quality De Minimis Emission Levels [10 Code of State Regulations (C.S.R.) 6.060(7)(A)].
- PCB Regulations at 40 C.F.R. Part 761.
- RCRA Land Disposal Restrictions at 40 C.F.R. Part 268.
- Clean Water Act and its implementing regulations.
- Missouri Water Quality Standards at 10 C.S.R. 20-7.031.
- City of Holden's sewer ordinance.

These action-specific ARARs will be met by the selected remedy.

11.2.2 Chemical-Specific ARARs

- PCB Regulations at 40 C.F.R. Part 761.

11.2.3 Location-Specific ARARs

No location-specific ARARs have been identified for the site.

11.2.4 Other Criteria, Advisories, or Guidances to be Considered (TBCs) for the Remedial Action

The PCB Spill Cleanup Policy (40 C.F.R. Part 761, Subpart G) and the below-described August 1990 PCB Cleanup Guidance are TBCs for the site and will be met by implementation of the selected remedy.

In August of 1990, the Agency published the "Guidance on Remedial Actions for Superfund Sites With PCB Contamination" (OSWER Directive No. 9355.4-01). This guidance document states that treatment should be considered at Superfund sites for soil and debris contaminated with PCBs which constitute a principal threat. Concrete falls under the category of debris.

In evaluating the statutory preference for treatment in order to achieve permanence and how to address that requirement at the Rose site, the Region was unable to identify the existence of other remedial actions which addressed the disposal of PCB-contaminated concrete similar to the conditions that exist at the Rose site. For the Rose site, strict compliance with the aforementioned August 1990 policy would require treatment of all concrete contaminated with PCBs above 100 ppm, resulting in significant costs when compared to the environmental benefits gained. Therefore, for the Rose site, the Region determined that it would be reasonable to use an analytical approach in determining an appropriate cost effective level of treatment for contaminated concrete.

In conducting the analysis, the Region initially sought current estimates of unit costs for excavating, transporting, and offsite landfilling of all PCB-contaminated materials to be disposed of under the Alternative 6, landfill disposal remedy. Using those costs, an estimate of $12,400,000 was determined to be the reasonable cost to landfill all PCB-contaminated material identified for disposal under Alternative 6. That cost was used as the base cost in completing the following analysis, which describes the additional costs that would be incurred in treating by incineration PCB-contaminated concrete above five different contamination levels. For a detailed breakdown of these estimates, <u>see</u> Appendix A.

- A 5% increase in the base cost ($12,400,000) to $13,000,000 would allow treatment of all concrete contaminated at levels greater than 10,000 ppm PCBs and soils which constitute a principal threat. Under this scenario, 58% of the PCBs contained in the concrete at the site would be treated.

- A 10% increase in the base cost ($12,400,000) to $13,600,000 would allow treatment of all concrete contaminated at levels greater than 2,500 ppm PCBs and

soils which constitute a principal threat. Under this scenario, 81% of the PCBs contained in the concrete at the site would be treated.

- A 22.4% increase in the base cost ($12,400,000) to $14,800,000 would allow treatment of all concrete contaminated at levels greater than 1,000 ppm PCBs and soils which constitute a principal threat. Under this scenario, 94.5% of the PCBs contained in the concrete at the site would be treated.

- A 24% increase in the base cost ($12,400,000) to $15,400,000 would allow treatment of all concrete contaminated at levels greater than 500 ppm PCBs and soils which constitute a principal threat. Under this scenario, 97.7% of the PCBs contained in the concrete at the site would be treated.

- In order to treat all contaminated concrete which exceeds 100 ppm PCBs, an increase of over 27% of the base cost ($12,400,000) to $15,800,000 would be required. Under this scenario, 99.7% of the PCBs contained in the concrete as well as the soils which constitute a principal threat would be treated.

Analysis of the above, along with the nine criteria set forth in 40 C.F.R. § 300.430(f) and consideration of the statutory preference for treatment in order to achieve permanence, has resulted in the selection of a disposal option in which all concrete contaminated at levels equal to or greater than 2,500 ppm PCBs and all soil which constitutes a principal threat will be incinerated. Materials falling below these thresholds will be disposed in an appropriate offsite TSCA chemical waste landfill.

11.3 COST-EFFECTIVENESS

The selected alternative is cost-effective because it has been determined to provide overall effectiveness proportional to its cost, estimated at a present worth of $13.6 million. The selected alternative assures a higher degree of certainty and overall protectiveness than the least costly alternative (Alternative 2).

Incineration of the highly contaminated materials will result in a higher degree of long-term effectiveness than that afforded by containment at a TSCA chemical waste landfill.

11.4 UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE

EPA believes that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for the Rose site. Of those alternatives that are protective of human health and the environment and that comply with ARARs, EPA has determined that this selected remedy provides the best balance of tradeoffs in terms of long-term effectiveness and permanence; reduction in toxicity, mobility, or volume achieved through treatment; short-term effectiveness; implementability; and cost. The selected remedy considers the statutory preference for treatment as a principal element, as well as state and community input.

The selected remedy treats and destroys a greater amount of the site contaminants than the other alternatives, through incineration or carbon regeneration, and has fewer residuals requiring disposal in a hazardous waste land disposal facility.

The selected remedy reduces the toxicity, mobility, and volume of contaminated material at the site through treatment as described above. The other proposed alternatives, involving solely the landfill disposal option, provide lesser degrees of toxicity, mobility, and volume reduction.

TABLE 1

SUMMARY OF CHEMICALS DETECTED IN SUBSURFACE SOIL
AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration
Acetone	54/132	115	820 µg/kg
Aroclor 1242	50/134	14.4	530 mg/kg
Aroclor 1254/1260	45/134	41.8	1600 mg/kg
Benzene	2/132	29	43 µg/kg
2-Butanone	5/5	17	49 µg/kg
Chlorobenzene	2/132	1250	2400 µg/kg
1,1-Dichloroethane	4/132	19	25 µg/kg
1,1-Dichloroethene	4/132	56	180 µg/kg
Ethylbenzene	11/132	62	410 µg/kg
1-Ethyl-3-methyl benzene	1/1	35	35 µg/kg
gama-Hexachlorocyclohexane	4/132	0.09	0.20 µg/kg
2-Hexanone	2/132	13	19 µg/kg
Methyl ethyl ketone	20/132	58	280 µg/kg
Methylene chloride	67/132	50	480 µg/kg
4-Methyl-2-pentanone	1/132	24	24 µg/kg
Styrene	2/132	9	12 µg/kg
Tetrachloroethene	8/132	446	270 µg/kg
Toluene	11/132	10	37 µg/kg
1,1,1-Trichloroethane	4/132	49	125 µg/kg
Trichloroethene	4/132	420	1500 µg/kg
2,4,4-Trimethyl-1-pentane	1/1	36	36 µg/kg
3,4,4-Trimethyl-2-pentane	1/1	16	16 µg/kg
Xylenes (total)	28/132	198	2800 µg/kg

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between replicate samples.

TABLE 2

SUMMARY OF CHEMICALS DETECTED IN ONSITE SURFACE SOIL AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration
Aroclor 1242	58/64	20.03	440 mg/kg
Aroclor 1254/1260	60/64	34.48	420 mg/kg

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between replicate samples.

TABLE 3

SUMMARY OF CHEMICALS DETECTED IN GROUND WATER
AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration	
Acetone	4/103	43	110	µg/L
Aroclor 1242 [3]	2/156	8.15	12.9	µg/L
Aroclor 1254/1260 [3]	3/156	4.33	9.6	µg/L
Bromochloromethane	1/103	51	51	µg/L
Chloroform	8/103	33	130	µg/L
1,1-Dichloroethane	7/103	3609	17000	µg/L
1,1-Dichloroethene	3/103	1280	2200	µg/L
1,2-Dichloroethene	13/103	1013	9200	µg/L
trans-1,3-Dichloropropene	1/103	2400	2400	µg/L
Ethanol	1/1	23	23	µg/L
Ethylbenzene	3/103	3567	4500	µg/L
2-Methoxy-2-methyl-propane	1/1	90	90	µg/L
Methylene chloride	3/103	8338	25000	µg/L
1,1,2,2-Tetrachloroethane	1/103	93	93	µg/L
Tetrachloroethene	9/103	4827	12000	µg/L
Toluene	5/103	17402	49000	µg/L
1,1,1-Trichloroethane	5/103	34540	160000	µg/L
Trichloroethene	16/103	1481	8400	µg/L
Vinyl chloride	1/103	82	82	µg/L
Xylenes (total)	3/103	32000	34000	µg/L

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between replicate samples.

(3) Only ground water samples from sampling rounds three and four were used to determine the average concentrations for PCBs.

(4) Only results of unfiltered samples only are reported. No constituents were detected in filtered samples.

TABLE 4

SUMMARY OF CHEMICALS DETECTED IN SEDIMENT AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration	
Acetone	12/47	91	350	µg/kg
Aroclor 1242	25/47	13.23	98	mg/kg
Aroclor 1254/1260	28/47	19.82	145	mg/kg
Benzene	1/47	5	5	µg/kg
1,3-Butadiene-1-01,acetate	1/1	57	57	µg/kg
Chloromethane	1/47	11	11	µg/kg
2,2-Dimethyl-3-hexene	1/1	74	74	µg/kg
2-Ethyl-1-hexanol	2/2	150	190	µg/kg
3-Heptanone	1/47	31	31	µg/kg
g-Hexachlorocyclohexane	1/47	1.1	1.1	µg/kg
2-Hexanone	1/47	130	130	µg/kg
Methyl ethyl ketone	1/47	30	30	µg/kg
Methylene chloride	15/47	95	730	µg/kg
5-Methyl-1-heptene	1/1	79	79	µg/kg
4-Methyl-2-pentanone	1/47	6	6	µg/kg
Morphinan, 7-8-didehydri-3-methoxy-17-methyl-6-methylene	1/1	17	17	µg/kg
3-Octene	1/1	22	22	µg/kg
Pentachlorobenzene	1/1	0.1	0.1	mg/kg
1,2,4,5-Tetrachlorobenzene	1/1	0.3	0.3	mg/kg
Tetrachloroethene	1/47	6	6	µg/kg
1,2,4-Trichlorobenzene	1/1	0.1	0.1	mg/kg
Trichloroethene	13/47	17	53	µg/kg
Toluene	11/47	2247	11000	µg/kg
Xylenes (total)	5/47	584	1800	µg/kg

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between replicate samples.

TABLE 5

SUMMARY OF CHEMICALS DETECTED IN SURFACE WATER
AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration	
FILTERED SAMPLES				
Acetone	1/1	13	13	µg/kg
Aroclor 1242	2/9	3.1	4.9	mg/kg
Aroclor 1254/1260	1/9	1.6	1.6	mg/kg
UNFILTERED SAMPLES				
Acetone	4/12	31	45	µg/kg
Aroclor 1242	8/12	5.0	21	mg/kg
Aroclor 1254/1260	7/12	3.4	6	mg/kg
Chlorobenzene	1/12	5	5	µg/kg
1,1-Dichloroethane	2/12	26	26	µg/kg
1,1-Dichloroethene	3/12	45	68	µg/kg
Ethanol	1/1	16	16	µg/kg
Methyl ethyl ketone	1/12	7	7	µg/kg
Methylene chloride	2/12	20	20	µg/kg
1,2,4,5-Tetrachlorobenzene	3/12	207	230	µg/kg
Tetrachloroethene	1/12	8	8	µg/kg
Toluene	4/12	6	8	µg/kg
1,2,4-Trichlorobenzene	3/12	303	410	µg/kg
1,1,1-Trichloroethane	3/12	342	490	µg/kg
1,1,2-Trichloroethane	2/12	109	140	µg/kg
Trichloroethene	1/12	9	9	µg/kg
Xylenes (total)	2/12	12	12	µg/kg

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between replicate samples.

TABLE 6

SUMMARY OF CHEMICALS DETECTED
IN THE BUILDINGS AND STRUCTURES INVESTIGATION
AT THE MARTHA C. ROSE CHEMICALS, INC. SITE

Constituent	Frequency of Detection[1]	Average Concentration[2]	Maximum Concentration	
FLOOR WIPE SAMPLES - Biased				
Aroclor 1242	13/13	82764	970000	µg/100 sq.cm.
Aroclor 1254/1260	13/13	47194	400000	µg/100 sq.cm.
FLOOR WIPE SAMPLES - Unbiased				
Aroclor 1242	37/43	235.6	1700	µg/100 sq.cm.
Aroclor 1254/1260	40/43	316.7	3200	µg/100 sq.cm.
INTERIOR WALL WIPE SAMPLES - Biased				
Aroclor 1242	11/12	129.0	990	µg/100 sq.cm.
Aroclor 1254/1260	9/12	374.4	2400	µg/100 sq.cm.
INTERIOR WALL WIPE SAMPLES - Unbiased				
Aroclor 1242	34/46	23.5	190	µg/100 sq.cm.
Aroclor 1254/1260	34/46	25.0	160	µg/100 sq.cm.
HORIZONTAL SURFACE WIPE SAMPLES - Biased				
Aroclor 1242	11/13	25.1	120	µg/100 sq.cm.
Aroclor 1254/1260	11/13	34.4	120	µg/100 sq.cm.
HORIZONTAL SURFACE WIPE SAMPLES - Unbiased				
Aroclor 1242	17/17	46.8	300	µg/100 sq.cm.
Aroclor 1254/1260	16/17	73.5	530	µg/100 sq.cm.
CEILING WIPE SAMPLES				
Aroclor 1242	15/17	12.8	75	µg/100 sq.cm.
Aroclor 1254/1260	13/17	5.4	21	µg/100 sq.cm.
EXTERIOR WIPE SAMPLES - Biased				
Aroclor 1242	0/12	NA	NA	µg/100 sq.cm.
Aroclor 1254/1260	6/12	3.3	4.8	µg/100 sq.cm.
EXTERIOR WIPE SAMPLES - Unbiased				
Aroclor 1242	3/19	8.6	15	µg/100 sq.cm.
Aroclor 1254/1260	11/19	4.4	6.8	µg/100 sq.cm.
INSULATION SAMPLES - Biased				
Aroclor 1242	13/13	464	3400	µg/sample
Aroclor 1254/1260	13/13	383	1700	µg/sample
INSULATION SAMPLES - Unbiased				
Aroclor 1242	22/23	1896	22000	µg/sample
Aroclor 1254/1260	22/23	958	3800	µg/sample
DESTRUCTIVE SAMPLES				
Aroclor 1242	7/7	1740.3	7300	µg/sample
Aroclor 1254/1260	7/7	1681.6	9300	µg/sample

Notes:

(1) Number of samples in which constituent was detected/number of samples for which constituent was analyzed.

(2) Average concentration is calculated using only samples in which the constituent was detected and the highest value between collected or replicate samples.

TABLE 7

TOXICITY PARAMETERS FOR THE ROSE SITE INDICATOR CHEMICALS[a]

Indicator Chemical	CPF - oral (mg/kg/day)$^{-1}$	CPF - inhalation (mg/kg/day)$^{-1}$	RfD - oral (mg/kg/day)	RfD-inhalation (mg/kg/day)
Aroclor 1242	7.7	7.7[b]	0.0001[c]	0.0001[d]
Aroclor 1254/1260	7.7	7.7[b]	0.0001[c]	0.0001[d]
1,1-Dichloroethane	0.091	--	0.1	0.1
1,1-Dichloroethene	0.6	1.2	0.009	--
g-Hexachlorocyclohexane[e]	1.3	1.3	0.0003	0.0003
Methylene chloride	0.0075	0.014	0.06	0.06
Tetrachloro-ethylene	0.051	0.0033	0.01	--
Toluene	--	--	0.3	1.0
1,2,4-Trichlorobenzene	--	--	0.02	0.003
1,1,1-Trichloroethane	--	--	0.09	0.3
Trichloroethylene	0.011	0.013	--	--

Notes:

a Except where noted, toxicity parameters are from USEPA Health Effects Assessment Summary Tables updated March 1989.

Oral CPFs and RfDs were used for estimating risks associated with dermal exposure to the indicator chemicals, with adjustment for the lower rate of absorption by the dermal route.

b The USEPA has derived a CPF for PCBs for the oral route of exposure only. The oral route CPF was also used for estimating risks associated with the oral inhalation route. Differences in absorption between the oral and inhalation routes are taken into account in the equations for estimating the absorbed dose of PCBs.

c Value obtained from Drinking Water Criteria Document for Polychlorinated Biphenyls, USEPA, 1989.

d The USEPA has derived an RfD for PCBs for the oral route of exposure only. The oral route RfD was also used for estimating risks associated with the oral inhalation route. Differences in absorption between the oral and inhalation routes are taken into account in the equations for estimating the absorbed dose of PCBs.

e Routes of exposure for both the CPF and RfD for g-hexachlorocyclohexane (lindane) are unspecified by the USEPA.

TABLE 8

SUMMARY OF POTENTIAL EXPOSURE PATHWAYS

Pathway	Current Use/ No Action Onsite Trespasser	Current Use/ No Action Offsite Resident	Future Use/ Industrial Development Onsite Worker[a]	Future Use/ Residential Development Onsite Resident
Inhalation of Vapors • Exterior • Interior of Buildings	X	X	-	X
Inhalation of Particulates	X	X	-	X
Dermal Contact with Soil	X	X	-	X
Ingestion of Soil	X	X[b]	-	X[b]
Ingestion of Vegetables	-	X	-	X
Ingestion of Beef [c]	-	X	-	-[i]
Ingestion of Sediments	X[d]	X[e]	-	-[h,i]
Dermal Contact with Surface Water	X[d]	X[e]	-	-[h,i]
Dermal Contact with Sediments	X[d]	X[e]	-	-[h,i]
Ingestion of Ground Water	-	-[f]	-[f]	-[f]
Exposures in Buildings • Inhalation of Vapors • Dermal Contact with Surfaces	X	-	X[g]	-[h]

Notes:

a Worker expected to spend majority of work day indoors.

b Child modeled in addition to adult.

c Cattle exposed through sediments, soils, water, and air in the vicinity of East Pin Oak Creek and its tributary.

d Contact with onsite ponds by wading while trespassing.

e Exposure of children and teenagers to East Pin Oak Creek and its tributary while playing.

f Perched water-bearing subsurface units are not considered viable sources of drinking water.

g Assumes no cleanup or major renovation of the interior of the buildings in the future.

h Assumes buildings, slabs, and ponds are removed.

i Potential exposure from these pathways for the onsite resident are assumed equivalent to the offsite resident.

TABLE 9

SUMMARY OF EXCESS UPPER-BOUND LIFETIME CANCER RISKS FOR TYPICAL CASE

Pathway	No Action[a] (Current Use)		Industrial Development	Residential[c] Development
	Offsite Resident	Onsite Trespasser	Onsite Worker	Onsite Resident
Soil ingestion (Adult)	1.0×10^{-7}	4.3×10^{-8}		2.5×10^{-7}
Soil ingestion (Child)	1.5×10^{-6}			3.7×10^{-6}
Soil, dermal	9.9×10^{-8}	8.2×10^{-8}		2.5×10^{-7}
Wading, dermal	6.9×10^{-7}	1.0×10^{-6}		6.9×10^{-7}
Particulate inhalation	2.2×10^{-8}	2.1×10^{-10}		1.9×10^{-8}
Vapor, inhalation, outdoor	1.0×10^{-5}	9.9×10^{-8}	1.5×10^{-7}[d]	
Vapor, inhalation, indoor, new building			7.0×10^{-6}[e]	6.2×10^{-5}
Beef, ingestion	1.3×10^{-4}			1.3×10^{-4}
Vegetable, ingestion	2.4×10^{-6}			5.5×10^{-6}
Sediment, ingestion	7.7×10^{-7}	2.0×10^{-7}		7.7×10^{-7}
Sediment, dermal	1.8×10^{-6}	4.6×10^{-7}		1.8×10^{-6}
Existing buildings, vapor inhalation		1.6×10^{-5}	3.8×10^{-3}[b]	
Existing buildings, floor, dermal		6.0×10^{-5}	1.7×10^{-3}[b]	
Existing buildings, wall, dermal		1.7×10^{-6}	4.9×10^{-5}[b]	

Notes:

a Assumes no changes to current site conditions.

b Assumes existing buildings (without cleanup) are used by future worker who spends majority of work day indoors.

c Assumes that only buildings, concrete, and ponds are removed.

d Assumes existing buildings are removed and PCB soils > 10 ppm and existing concrete slabs are capped.

e Assumes use of a warehouse type building with a 20-foot ceiling and a ventilation rate of 1 air change per hour.

TABLE 10

SUMMARY OF MDD/RfD RATIOS FOR NON-CARCINOGENIC EFFECTS FOR TYPICAL CASE

Pathway	No Action[a] (Current Use)		Industrial Development	Residential[c] Development
	Offsite Resident	Onsite Trespasser	Onsite Worker	Onsite Resident
Soil ingestion (Adult)	7.6×10^{-3}	2.8×10^{-2}		1.9×10^{-2}
Soil ingestion (Child)	7.4×10^{-2}			1.8×10^{-1}
Soil, dermal	7.5×10^{-3}	4.5×10^{-1}		1.9×10^{-2}
Wading, dermal	8.2×10^{-2}	5.1×10^{-1}		8.2×10^{-2}
Particulate inhalation	2.4×10^{-4}	5.9×10^{-5}		2.0×10^{-4}
Vapor, inhalation, outdoor	4.5×10^{-1}	1.2×10^{-1}	2.2×10^{-3}[d]	
Vapor, inhalation, indoor, new building				$1.4 \times 10^{+1}$
Beef, ingestion	1.4			1.4
Vegetable, ingestion	2.6×10^{-2}			5.9×10^{-2}
Sediment, ingestion	1.1×10^{-1}	1.3×10^{-1}		1.1×10^{-1}
Sediment, dermal	2.3×10^{-1}	2.7×10^{-1}		2.3×10^{-1}
Existing building, vapor inhalation		8.8	$5.4 \times 10^{+1}$[b]	
Existing building, floor, dermal		$3.1 \times 10^{+1}$	$2.4 \times 10^{+1}$[b]	
Existing building, wall, dermal		8.7×10^{-1}	6.9×10^{-1}[b]	

Notes:

a Assumes no changes to current site conditions.

b Assumes existing buildings (without cleanup) are used by future worker who spends majority of work day indoors.

c Assumes that only buildings, concrete, and ponds are removed.

d Assumes existing buildings are removed and PCB soils > 10 ppm and existing concrete slabs are capped.

GLOSSARY

Specialized terms used elsewhere in this Proposed Plan are defined below:

activated carbon - Absorbent material used in water treatment to remove organic contaminants.

Applicable or Relevant and Appropriate Requirements (ARARs) - The federal and state requirements that a contaminant concentration or remedy must attain. These requirements may vary between sites and alternatives.

"delisting" - The formal process of declaring a material no longer hazardous following treatment.

encapsulation - Application of an impermeable sealant to immobilize contaminants.

ground water - Underground water that fills pores in soils or openings in rocks to the point of saturation. Unlike surface water, ground water cannot clean itself by exposure to sun or filtration. Ground water is often used as a source of drinking water via municipal or domestic wells.

incineration - High temperature burning of materials to destroy hazardous compounds.

intermittent tributary - Small creek which does not contain water year-round.

polychlorinated biphenyls (PCBs) - Chemicals used for their thermal stability and non-flammability as an electric fluid in electrical capacitors and transformers.

potentially responsible party (PRP) - Defined under Section 107(a) of CERCLA. PRPs include current and past owners and operators, as well as persons who arranged for the transport, treatment, or disposal, of hazardous substances.

present worth - Present worth is the amount of capital required to be deposited at the present time at a given interest rate to yield the total amount necessary to pay for initial construction costs and future expenditures. Present worth analysis provides a method of evaluating and comparing costs that occur over different time periods (such as operation and maintenance) by discounting all future expenditures to the present year.

volatile organic compounds (VOCs) - Organic compounds that vaporize easily. Some VOCs have been shown to cause leukemia, some are toxic to the kidney and liver; and some depress the Central Nervous System, causing drowsiness.

APPENDIX A

EPA

COST ESTIMATES

INCINERATION DISPOSAL OPTIONS

A. OFFSITE INCINERATION

SOIL PRINCIPAL THREAT **CONCRETE > 100 PPM**

VOLUMES

SOIL

PRINCIPAL THREAT = 227 TONS	13 TRUCKS
>10 < PRINCIPAL THREAT = 8176 TONS	454 TRUCKS

CONCRETE

>100 PPM = 3330 TONS	185 TRUCKS
<100 PPM = 1170 TONS	65 TRUCKS

COST ESTIMATE

LANDFILL 110 $/TON (8176 + 1170) = $ 1,028,060

TRANSPORTATION 3.5 (1535) (454 + 65) = $ 2,788,328

INCINERATE 1500 $/TON (227 + 3330) = $ 4,654,500

TRANSPORTATION 3.5 (200) (13 + 185) = $ 138,600

SUBTOTAL..... $ 8,609,488

TOTAL = 8,609,488 + BASE COST(7,161,919) = $ 15,771,407

<u>$ 15,800,000</u>

B. OFFSITE INCINERATION

SOIL PRINCIPAL THREAT CONCRETE > 500 PPM

VOLUMES

SOIL

PRINCIPAL THREAT = 227 TONS 13 TRUCKS

>10 < PRINCIPAL THREAT = 8176 TONS 454 TRUCKS

CONCRETE

>500 PPM = 2430 TONS 135 TRUCKS

<500 PPM = 2070 TONS 115 TRUCKS

COST ESTIMATE

LANDFILL 110 $/TON (8176 + 2070) = $ 1,127,060

TRANSPORTATION 3.5(1535) (454 + 115) = $ 3,056,953

INCINERATION 1500 $/TON (227 + 2430) = $ 3,985,500

TRANSPORTATION 3.5 (200) (13 + 135) = $ 103,600

SUBTOTAL = ...$ 8,273,113

TOTAL = 8,273,113 + BASE COST (7,161,919) = $ 15,435,032

<u>$15,400,000</u>

C. OFFSITE INCINERATION

SOIL PRINCIPAL THREAT **CONCRETE > 1000 PPM**

VOLUMES

SOIL

PRINCIPAL THREAT = 227 TONS	13 TRUCKS
>10 < PRINCIPAL THREAT = 8176 TONS	454 TRUCKS

CONCRETE

> 1000 PPM = 1845 TONS	103 TRUCKS
< 1000 PPM = 2655 TONS	148 TRUCKS

COST ESTIMATE

LANDFILL 110 $/TON (8176 + 2655) = $ 1,191,410

TRANSPORTATION 3.5 (1535) (454 + 148) = $ 3,234,245

INCINERATION 1500 $/TON (227 + 1845) = $ 3,108,000

TRANSPORTATION 3.5 (200) (13 + 103) = $ 88,200

SUBTOTAL.....$ 7,621,855

TOTAL = 7,621,855 + BASE COST(7,161,919) = $ 14,783,744

<u>$ 14,800,000</u>

D. OFFSITE INCINERATION

SOIL PRINCIPAL THREAT **CONCRETE >2500 PPM**

VOLUMES

SOIL

PRINCIPAL THREAT = 227 TONS	13 TRUCKS
>10 < PRINCIPAL THREAT = 8176 TONS	454 TRUCKS

CONCRETE

>2500 PPM = 810 TONS	45 TRUCKS
<2500 PPM = 3690 TONS	205 TRUCKS

COST ESTIMATE

LANDFILL 110 $/TON (8176 + 3690) = $ 1,305,260

TRANSPORTATION 3.5 (1535) (454+ 205) = $ 3,540,478

INCINERATION 1500 $/TON (227 + 810) = $ 1,555,500

TRANSPORTATION 3.5 (200) (13 + 45) = $ 40,600

SUBTOTAL .....$ 6,441,838

TOTAL = 6,441,838 + BASE COST (7,161,919) = $ 13,603,756

<u>$ 13,600,000</u>

E. OFFSITE INCINERATION

SOIL PRINCIPAL THREAT CONCRETE >10,000 PPM

VOLUMES

SOIL

PRINCIPAL THREAT = 227 TONS	13 TRUCKS
>10 < PRINCIPAL THREAT = 8176 TONS	454 TRUCKS

CONCRETE

>10,000 PPM = 315 TONS	18 TRUCKS
<10,000 PPM = 4185 TONS	232 TRUCKS

COST ESTIMATE

LANDFILL 110 $/TON (8176 + 4185) = $ 1,359,710

TRANSPORTATION 3.5 (1535) (454 + 232) = $ 3,685,535

INCINERATION 1500 $/TON (227 + 315) = $ 813,000

TRANSPORTATION 3.5 (200) (13 + 18) = $ 21,700

SUBTOTAL .....$ 5,879,945

TOTAL = 5,879.945 + BASE COST (7,161,919) = $ 13,041,864

<u>$ 13,000,000</u>

APPENDIX B

RESPONSE LETTER

ON ARARS

STATE OF MISSOURI

JOHN ASHCROFT
Governor

G. TRACY MEHAN III
Director

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176
Jefferson City, MO 65102

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks, Recreation, and Historic Preservation

March 12, 1991

RECEIVED
MAR 15 1991
REML SECTION

Mr. Steven E. Kinser
U.S. Environmental Protection
Agency, Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Dear Mr. Kinser:

As requested in your March 1, 1991 correspondence, the Missouri Department of Natural Resources (MDNR) has again reviewed the description of the conditions at the Martha C. Rose Chemicals Inc. site as presented in the Remedial Investigation and Feasibility Study (RI/FS). This review was completed by the staff from the Division of Geology and Land Survey and the Division of Environmental Quality's Waste Management and Water Pollution Control Programs. The following determinations have been made regarding identification of State Applicable or Relevant and Appropriate Requirements (ARARs) as they relate to the groundwater at the Rose Chemicals site:

1. The shallow groundwater at this site is not a "usable" aquifer for the following reasons:

   Depth of contamination is limited to groundwater above a shale bedrock;

   This shale bedrock exhibits a low permeability and reduces the possibility of contaminants migrating vertically into the deeper, usable aquifer; and

   Missouri water well laws render the shallow groundwater unusable because of minimum casing lengths.

   Collectively, these criteria restrict the contamination to a finite, unusable zone of groundwater.

2. The groundwater at depth, in a more permeable stratum and obtainable by water well laws, would constitute a usable aquifer. However, the RI determined that the contamination was limited in depth and has not migrated into this lower groundwater system ("No

VOCs were detected in samples obtained from any deep well"). No State ARARs were identified for this aquifer, since it is not impacted and, therefore, would not affect the Remedial Action.

3. The discharge of the shallow groundwater into the surface water, as stated in the Risk Assessment (RA), poses some risk attributed to specific usage of that surface water, i.e., beef cattle drinking the water and then being consumed by human populations. Only classified streams are meant to be protected as a long-term source of drinking water for livestock. The Standard's General Criteria prohibit acute toxicity to livestock in unclassified waters, but unclassified waters are not believed to provide a continuous water supply. Bioaccumulation above FDA action levels caused by beef drinking from any waters of the State should be considered an exceedence of the Standard's criteria, however, "...waters... must be free from substances [having] a harmful effect on human life."

The projected worst case for PCB accumulation is 2-5 ppm; the FDA action level for red meat is 3ppm. With the conservative assumptions made, however, the risk of accumulation to this level would seem to be low.

The classified stream begins about 2 miles below the Rose Chemicals site. Most of the contaminated sediments are in the first 1/4 mile.

PCB water concentrations in the 1-2 ppb range at "downstream" locations would seem to be in exceedence of the extremely low allowable concentrations of PCBs in classified streams (for protection of human health-fish consumption), if some locations are in the classified part of the stream. However, MDNR does not believe these waters to be a productive sport fishing area, which would yield enough fish over a 70 year period to cause a human health concern.

One additional general comment should be included in this response. In the Rose Chemicals site FS, appendix B, page B-2, second paragraph, a reference is made to MDNR's "guidance policy" that aquifers must show minimum yields of 5-10 gpm or have significant impacts on stream recharge. The "guidance policy" referred to was established for underground storage tank removal actions and does not set the standard or authority by which all aquifers in the State of Missouri are definitively determined.

Enclosed is a list of State of Missouri ARARs or potential ARARs that have been identified for the Rose Chemicals site. For your information, I have also attached an updated table for the Rose site's "Indicator Chemicals" as per the recently revised Missouri Water Quality Standards criteria.

I trust this information adequately addresses the issues you requested responses to. If you require additional clarification or desire further discussion of these issues, please do not hesitate to call.

Sincerely,

WASTE MANAGEMENT PROGRAM

Robert Geller

Robert Geller, Chief
Project Management Unit
Superfund Section

RG:jkp

c: Jim Fels, DGLS
John Howland, WPCP

STATE ACTION-SPECIFIC ARARS
MARTHA C. ROSE CHEMICAL, INC. SITE

STANDARD, REQUIREMENTS, CRITERIA, OR LIMITATION	CITATION	DESCRIPTION	COMMENTS
Missouri Hazardous Waste Management Regulations	10 CSR 25-10.010	Procedures for obtaining State approval for remedial actions at abandoned or uncontrolled sites.	The requirements may be applicable for the Rose Chemical site.
Missouri Hazardous Waste Management Regulations	10 CSR 25-13.010	Standards for management of waste materials or waste manufactured items containing PCBs at concentrations of fifty parts per million or more.	These standards may be applicable/relevant and appropriate requirements for the Rose Chemical site.
Missouri Hazardous Waste Management Regulations	10 CSR 25-6.263	Standards for Transporters of Hazardous Waste.	These requirements may be applicable for the Rose Chemical site if removal offsite of hazardous waste or PCB material.
Missouri Air Quality Standards and Air Pollution Control Regulations.	10 CSR 10-6.	Air Quality Standards and Air Pollution Control Regulations for the State of Missouri.	These requirements may be applicable for the Rose Chemical site if onsite incineration is involved as a remedial action.
Missouri Solid Waste Management Regulations	10 CSR 80	Standards for management of Solid Waste disposal practices.	These requirements may be applicable for the Rose Chemical site if remedial action involves disposal of solid waste in Missouri landfills.

STATE LOCATION-SPECIFIC ARARS
MARTHA C. ROSE CHEMICAL, INC. SITE

STANDARD, REQUIREMENTS, CRITERIA, OR LIMITATION	CITATION	DESCRIPTION	COMMENTS
Missouri Water Quality Standards	10 CSR 20-7.031	Promulgates rules to protect quality of rivers, lakes, streams, and other surface and subsurface waters of the state. Beneficial use of East Pin Oak Creek and its tributary lists livestock watering.	This requirement may be relevant and appropriate for the Rose Chemical site.

STATE CHEMICAL-SPECIFIC ARARS
MARTHA C. ROSE CHEMICAL, INC. SITE

STANDARD, REQUIREMENTS, CRITERIA, OR LIMITATION	CITATION	DESCRIPTION	COMMENTS
Missouri Safe Drinking Water Act and Missouri Water Quality	10 CSR 20-7.031	Maximum chemical contaminant levels and monitoring requirements	The requirements may be relevant and appropriate for the Rose Chemical site.
Missouri Hazardous Waste Management Regulations	10 CSR 25-10.010	Procedures for obtaining state approval for remedial actions at abandoned or uncontrolled sites.	The requirements may applicable for the Rose Chemical site.
Missouri Hazardous Waste Management Regulations	10 CSR 25-13.010	Standards for management of waste materials or waste manufactured items containing PCBs at concentrations of fifty parts per million or more.	These standards may be applicable or relevant and appropriate requirements for the Rose Chemical site.
Missouri Hazardous Waste Management Regulations	10 CSR 25-6.263	Standards for Transporters of Hazardous Waste and PCB's	These requirements may be applicable for the Rose Chemical site if removal offsite of hazardous waste or PCB material.

MISSOURI WATER QUALITY STANDARDS (4)

Indicator Chemicals	Human Health Fish Consumption (mg/L)	Drinking Water (mg/L)	Ground Water (mg/L)	Livestock/ Wildlife Watering (mg/L)
Aroclor 1242/1254/1260	4.5E-08	--	4.5E-08	--
Dichloroethane, 1,1-	--	--	--	--
Dichloroethylene, 1,1-	.0032	0.007	0.007	--
Hexachlorocyclohexane, g-	6.20E-05	2.20E-06	2.20E-06	--
Methylene Chloride	1.6	.0047	.0047	--
Tetrachloroethylene	.009	8.00E-04	8.00E-04	--
Toluene	300	10	10	--
Trichlorobenzene, 1,2,4-	--	--	--	--
Trichloroethane, 1,1,1-	--	0.2	0.2	--
Trichloroethylene	.08	.005	.005	--

(--) No potential ARAR identified.

4) Missouri Water Quality Standards are focused in 10 CSR 20-7.031, Effective March 1991.

APPENDIX C

RESPONSIVENESS SUMMARY

RECORD OF DECISION

MARTHA C. ROSE CHEMICALS SITE

MARCH 1992

INTRODUCTION

The purpose of this responsiveness summary is to present the significant comments received during the public comment period on the Proposed Plan and to respond to those comments and how they affected the preparation of the Record of Decision (ROD).

The Proposed Plan and the Administrative Record were made available to the public on or before June 20, 1991 in the City Offices of Holden and the Superfund Records Center in EPA's Region VII offices in Kansas City, Kansas. The public comment period was scheduled to be open between June 20, 1991 and July 27, 1991. A public hearing was scheduled and held on July 11, 1991. Subsequent to the public hearing, a request was received to extend the public comment period. Accordingly, the public comment period was extended to August 27, 1991.

SOURCE OF COMMENTS

Public Comments were received verbally during the public hearing and written comments were received during the public comment period.

A copy of the transcript of the public hearing and a copy of the written comments received will be placed in the Administrative Record for the site. The content of the significant comments and EPA's response is contained in the next section of this summary.

SUMMARY OF COMMENTS FROM THE PUBLIC HEARING AND EPA'S RESPONSE

The following is a summary of the significant comments received during the public hearing. After each comment is a summary of EPA's response provided at the meeting.

1. Comment:

What is the potential for retaining the buildings on site and making them safe for future use?

EPA's Response:

The current condition of the buildings would require extensive and very expensive repairs before they would again be usable. In addition, the difficulties and uncertainties involved in cleaning the buildings to remove the PCB contamination, especially from the concrete slabs, may make it impossible to reuse the buildings. EPA has concluded that it is not economically feasible to clean the buildings for future use.

2. Comment:

Is there any provision under the Superfund law whereby the responsible parties could be charged with the expense of replacing the buildings?

EPA's Response:

The Region does not believe the Superfund law provides EPA with authority to require responsible parties to replace the buildings once the contaminated materials have been removed.

3. Comment:

What is the relationship between cost effective and cost benefit?

EPA's Response:

It is difficult to determine a cost benefit for public health. Therefore, cost benefit in terms of public health is not used in selecting a preferred remedy. However, in selecting the appropriate remedial action, EPA is required to evaluate the alternative remedial actions in light of the nine criteria listed in 40 C.F.R. § 300.430(e)(2)(iii) of the NCP. In this evaluation, the cost of the remedial action is balanced against other factors including the level of protection of human health and the environment.

4. Comment:

The City of Holden prefers that all of the material at the site be removed from Holden. The city expressed no opinion concerning incineration or landfilling the material once it was removed from Holden.

EPA's Response:

EPA appreciates the City's input and agrees. Removal of PCB-contaminated material is reflected in the Proposed Plan and the Record of Decision.

5. Comment:

How much effort would be required to remove dirt from the creek and exactly how much dirt would be removed?

EPA's Response:

No exact volumetric estimates are possible, but all of the sediment will most likely be removed from the creek. In terms of cost, it will probably be more cost effective to remove all of the sediment rather than conducting the extensive sampling that would be necessary to identify the sediment that would have to be removed and which could remain. Once the sediment is removed, the creek will be backfilled with clean soil/fill material to its original configuration.

6. Comment:

What is the potential for erosion once the backfill for the Creek excavation has been completed?

EPA's Response:

Appropriate materials and compaction techniques will be required to ensure that the restoration of the creek, after removal of contaminated sediment, will be sufficient to ensure against future erosion.

SUMMARY OF WRITTEN COMMENTS AND EPA'S RESPONSE

7. Comment:

Commentator recommended Alternative 6 for the Martha C. Rose Chemicals Site.

EPA's Response:

Alternative 6, with some variation in the disposal/treatment method, deed restrictions and ground water monitoring, was the preferred remedy in the Proposed Plan for Remedial Action and is the selected remedy in the Record of Decision.

8. Comment:

Commentator stated that "On August 13, 1991 the Holden City Council voted to request that the EPA take all the material from the Martha C. Rose Chemicals site that can be landfilled without previously incinerating it, directly to a landfill. The Holden City Council believes that in the interests of expediency, the EPA should authorize the direct landfilling of all possible

materials. We understand that there may be some 'hot' spots that would require incineration first, but feel that the bulk of the material could be taken directly to an approved landfill."

EPA's Response:

The plan calls for all materials contaminated at levels of PCB's in excess of health based levels to be removed from the site. The plan further requires the incineration of only those materials which represent a principal threat. EPA believes that incineration of certain contaminated materials will not significantly increase the time necessary to complete the remedial actions for the site.

The remaining comments are from a three page letter accompanied by a 'Detailed Statement' which is twenty-six (26) pages in length. These comments encompassed and expanded upon the comments presented at the public hearing; therefore, the following EPA responses also address the verbal comments presented at the public hearing. Due to the detailed and complex nature of the comments, they will be addressed item by item as they appear in the correspondence. Where possible, references to previous comments will be included to avoid redundancy. Every effort has been made to address all significant issues.

9. Comment:

"First, Region VII's selection of Alternative 6 as the basic component of the proposed remedy finds no support in the Feasibility Study and is not justified by the Proposed Plan. When the criteria for remedy selection found in CERCLA and the National Contingency Plan ("NCP") are applied, Alternative 6 does not emerge as the preferred remedy. Instead, Alternative 4 is the more rational choice. ..."

In summary, the commentator believes Alternative 4 is a better choice because Alternative 4 and Alternative 6 both achieve the same level of risk reduction and are equally effective with respect to long-term effectiveness, Alternative 4 costs half of what Alternative 6 costs and is superior to Alternative 6 in terms of short-term effectiveness.

EPA's Response:

EPA does not agree with all of the conclusions contained in the FS which was prepared by the RCSC, and specifically disagrees with the conclusion that Alternative 4 is the rational choice of all the alternatives after the nine criteria are evaluated with

respect to each alternative. EPA believes the selection of Alternative 6 as the basic component of the remedy is in fact supported by the FS. The basic differences between Alternatives 4 and 6 are summarized in the FS, Page V-92:

> "The above analysis narrows the potential alternatives to 6 and 4. Both remove the off- and on-site sediment and the buildings. Alternative 4 caps the PCB soils and the concrete; Alternative 6 removes them, with an option for incineration followed by replacing the treated material on site. Both provide for future use. Alternative 6 has fewer restrictions, while Alternative 4 provides for industrial development only. In essence, Alternative 4 secures the PCBs on-site while Alternative 6 removes and treats or landfills them. Alternative 4 has more long-term maintenance requirements; however, it creates lower potential short-term health risks and costs 60 percent less than Alternative 6. Both protect human health and the environment and provide long-term effectiveness and permanence."

EPA's specific responses to commentator's evaluation of the criteria are set forth in the responses to comments 10-13, 17, 19, 21 and 23. Generally, EPA has determined that the short-term effects are overstated in the FS and in fact are negligible. The additional cost resulting from the selection of Alternative 6 rather than Alternative 4 is outweighed as a result of the consideration of the other eight criteria that must be evaluated by EPA in selecting the appropriate remedy. In addition, EPA believes that the site's location in Holden will lend it to a variety of future uses. In comparing Alternative 4 to Alternative 6, the location of the proposed cap in Alternative 4 would severely limit the potential future use of the site. Alternative 6 will allow for a greater variety of future uses of the site, an important factor considering the location of the site in Holden.

10. Comment:

> "Alternatives 4 and 6 achieve the same level of risk reduction, i.e., both reduce risks below the 10^{-6} level ...;"

EPA's Response:

Alternative 4 may achieve the same level of risk reduction as Alternative 6 once the cap is in place and as long as the cap included under Alternative 4 remains intact. However, the

uncertainty of the future maintenance of the cap leaves doubt concerning the long-term level of protectiveness. Also, see EPA's response to comment 17.

11. Comment:

"Alternatives 4 and 6 are equally effective in the long-term; although caps can pose some threat of remedy failure where groundwater is a concern, there is no such threat here, where the pathways of concern are direct contact with soils or building structures, not groundwater;"

EPA's Response:

There is very little uncertainty with respect to the long-term effectiveness of Alternative 6. The long-term effectiveness of Alternative 4 is wholly dependent upon the integrity of the cap. For long-term protectiveness, a higher degree of certainty is achieved with Alternative 6 with the reduction of intervening actions required to assure the continued effectiveness of the remedy. Also, see EPA's response to comment 19.

12. Comment:

"Alternative 4 is superior to Alternative 6 because it is more effective in the short-term ...;"

EPA's Response:

Due to the activities anticipated in the implementation of Alternative 6, the short-term effects are not anticipated to represent a significant threat. With the exception of removal of concrete building slabs, the activities that would take place under Alternative 6 that would not take place under Alternative 4 are identical to activities that have already been performed at the site with no known adverse effects. Stringent requirements would be necessary to keep the short-term effects of the concrete removal to a negligible impact, but it is not beyond current practices to do so. The time for implementation for Alternative 6 could be longer than for Alternative 4 (15 to 24 months vs. 12 to 24 months), but the impact on public health should be negligible. Also, see EPA's response to comment 21.

13. Comment:

"Alternative 4 costs half of what Alternative 6 costs ..."

EPA's Response:

According to the estimates provided in the FS, the present worth cost to implement Alternative 4 with the offsite landfill option is $6,103,745, compared to the present worth cost of $12,558,238 for Alternative 6 with the offsite landfill disposal option.

14. Comment:

"Region VII's apparent belief that it must add an incineration or treatment component to the proposed remedy (despite the fact that such treatment is unnecessary from a risk-reduction standpoint) is simply wrong. Region VII's reasons for requiring incineration are erroneous because:

(1) Contrary to CERCLA's language and the statute's intent, Region VII transforms CERCLA's preference for treatment into a mechanical requirement that treatment must always be performed;

(2) Region VII ignores EPA policy that site cleanups are to be evaluated as a whole and refuses to recognize that 9.4 million pounds of material, or 99% of the PCBs at the Site, have already been removed and incinerated, thereby satisfying CERCLA's treatment preference; and

(3) Region VII applies to the offsite disposal of Rose materials a document which has no legal force and which is designed only for material left onsite."

EPA's Response:

Contrary to the commentator's assertion. the Region does not believe it must automatically add a treatment component to the proposed remedy (emphasis added). However, statutory and regulatory requirements indicate the preference for treatment must be considered in selecting the final remedial action at the site.

(1) EPA views CERCLA's preference for treatment as just that, a preference, and not a requirement that treatment must always be performed. In developing remedial alternatives that involve treatment, EPA generally will consider the following factors set forth in the National Contingency Plan at 40 C.F.R. § 300.430(a)(iii), which states:

"(A) EPA expects to use treatment to address the principal threats posed by a site, whenever practicable. Principal threats for which treatment is most likely to be appropriate include liquids, areas contaminated with high concentrations of toxic compounds, and highly mobile materials.

(B) EPA expects to use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where treatment is impracticable.

(C) EPA expects to use a combination of methods, as appropriate, to achieve protection of human health and the environment. In appropriate site situations, treatment of the principal threats posed by a site, with priority placed on treating waste that is liquid, highly toxic or highly mobile, will be combined with engineering controls (such as containment) and institutional controls, as appropriate, for treatment residuals and untreated waste. ..."

EPA's selection of the treatment of the principal threats at the site is not inconsistent with the NCP, nor is it the result of an interpretation that all sites require treatment.

(2) Prior action at the site under two Administrative Orders with the RCSC has resulted in the treatment by incineration of approximately 11.1 million of the 21.1 million pounds of contaminated material removed from the site. However, EPA does not agree that the past actions necessarily satisfy CERCLA's preference for treatment, especially when highly contaminated materials remain onsite. EPA concurs that a substantial amount of highly contaminated materials have been removed from the site and treated; however, there remain onsite materials which are also highly contaminated which should also be treated. Approximately 21.1 million pounds of contaminated material have been removed from the site with 11.1 million pounds of that material, or 53 percent being incinerated. Of the approximately 25 million pounds of contaminated material that remain onsite, EPA proposes to treat only 8 percent of that remaining material. That would bring the total of treated contaminated material to approximately 13.1 million pounds, or 50 percent of all material remediated at the site. The RI/FS addressed the 25 million pounds of material that now remain at the site. The selection of the remedy is intended to address the threats at the site.

(3) This statement is apparently made in reference to use of the publication "Guidance on Remedial Actions for Superfund Sites With PCB Contamination" EPA/540/G-90-007, August 1990. This document was developed by EPA as a guide for the Regions in developing nationally consistent remedial actions for sites that involve PCB contamination and is intended to apply to

contaminated materials removed from Superfund PCB sites as well as sites where PCB-contaminated material is treated onsite. Also, see EPA's responses to comments 25 and 26.

15. Comment:

> "... requiring incineration of any of the remaining materials ... will increase the potential for future CERCLA liability to those who undertake the proposed remedy. In addition to the TSCA landfill which would ultimately receive the materials for disposal, one would incur potential future CERCLA liability at the treatment facility itself. As a practical matter, one can hardly justify or be expected to assume the significant additional expense of incineration where it will result in no meaningful benefit at the Site but will instead increase substantially the potential for future CERCLA liability."

EPA's Response:

As has already been stated, several million pounds of PCBs have already been incinerated and the future incineration of the remaining highly contaminated materials at the site should not result in any significant increase in potential liability, if the same treatment facility is utilized to implement the proposed remedy. In addition, the incineration process reduces the materials to non-hazardous levels, and therefore incinerated residue could be disposed of in a solid waste landfill. Even if the incineration residue were sent to the TSCA landfill, no significant increase in potential liability should occur because significant amounts of materials have previously been sent to the TSCA landfill pursuant to the second AOC and other contaminated materials would be sent to the TSCA landfill under each of the alternatives.

16. Comment:

> "Measured against the criteria set forth in the NCP, Region VII's Proposed Remedy is not any more protective of human health and the environment, nor more effective or permanent over the short- or long-term than alternatives involving capping.[1] Of course, Region VII makes no such claim in the Proposed Plan. Instead, Region VII, without explanation, selects Alternative 6 as the "basic component" of the Proposed Remedy. As the FS Report concluded, however, capping alternatives achieve the same level of protection as Alternative 6,

and can be implemented in a manner that reduces short-term risks and at far less cost than the Proposed Remedy."

Comments 17 through 23, following, expand upon this comment in terms of seven of the nine criteria that EPA must consider in selecting a remedy.

EPA's RESPONSE:

EPA's responses to comments 10-13, 17, 19, 21 and 23 are responsive to this comment. The responses address relevant factors, including: short-term and long-term effectiveness, future use of the site, cost, as well as protectiveness. The commentator believes the capping alternatives are a more logical choice based on an evaluation of four of the nine criteria: 1) overall protection of human health and the environment; 2) long-term effectiveness and permanence; 3) short-term effectiveness; and 4) cost. However, EPA's selection of Alternative 6 as the basic component of the proposed remedy is based upon its evaluation of all nine criteria, the four cited by the commentator, plus: 1) compliance with ARARs and TBCs; 2) reduction in toxicity, mobility and volume of contaminants through treatment; 3) implementability; 4) state acceptance; and 5) community acceptance.

17. Comment:

"a. Overall Protection of Human Health and the Environment. ... The FS Report concluded that the capping alternatives will achieve the same degree of overall protection of human health and the environment as Alternative 6, and Region VII's Proposed Plan confirms this conclusion."

"... Notably, Region VII and the Missouri Department of Natural Resources have concluded that groundwater pathways do not present any actual health risk at the Site."

"The capping alternatives thoroughly address the health risk concerns identified by the FS Report and Region VII. ..."

"Risk associated with contaminated building structures are reduced or eliminated under the capping alternatives. ... Risks associated with building structures are eliminated altogether under Alternative 4, where building structures are removed leaving only the concrete slabs intact. The concrete slabs are

covered by the cap. ... Alternative 4 is equivalent to Alternative 6 in reaching remedial action objectives. ..."

EPA'S Response:

The FS Report, prepared by the RCSC, concludes that Alternative 4 will achieve the same degree of overall protection as Alternative 6. EPA has concluded that Alternative 4 may achieve the same level of protectiveness if the maintenance of the cap could be assured.

Overall protection of human health and the environment is one of the nine criteria and addresses whether a remedy provides adequate protection to human health and the environment and is concerned with how risks through each pathway are eliminated, reduced or controlled. The capping alternatives and Alternative 6 all control the risks. Whereas the capping alternatives control the risks posed by the various media through capping and/or encapsulation, Alternative 6 eliminates the risks posed by each pathway by removing the contaminated materials from the site. All other factors being equal, Region VII believes it is better to eliminate, rather than control, the risks at a site. EPA does not believe that the two options inherently represent the same level of protection.

EPA has concluded that if no migration could be assured and the cap remains in place, the capping of the site would address the risks associated with the site. There is no assurance that there will be no migration, nor can it be assured that the cap will not be breached. While Region VII has concluded that ground water pathways do not present any current actual health risk, the contamination in the shallow ground water could pose potential health risks if recontamination of the unnamed tributary occurs through recharge from the shallow ground water.

Additionally, the large portion of the site to be capped would require institutional controls unduly restricting the future use of the site. In the event the cap fails, the potential for the recontamination of the areas previously remediated exists, along with the potential exposure to the highly contaminated material that Alternative 4 would leave onsite.

18. Comment:

"b. Compliance With ARARs. ... Virtually all of the alternatives discussed in the FS Report would comply with ARARs and TBCs. Region VII, nevertheless, apparently believes that the Guidance Document is a TBC which mandates further incineration of PCB-contaminated materials at the Site. ... Region VII simply is

mistaken in concluding that the Guidance Document is relevant at the Site. Foremost, the Guidance Document, by its terms, relates to situations where PCBs at or above certain levels could or are intended to remain at the Site. ... The materials that Region VII says will require treatment are not those that would remain at the Site under Alternative 6 and thus PCB concentration levels triggering the Guidance Document's recommendations will not exist at the Site. ... Moreover, the Guidance Document indicates that containment is an appropriate method of addressing soils contaminated over certain levels. Incineration is not required by the EPA's guidance. More important, the Guidance Document does not even address concrete. ..."

EPA's Response:

EPA has determined that the subject Guidance Document is a TBC which should be considered in selecting the remedial action for the site. Also, see EPA's responses to comments 14(3), 25 and 26.

19. Comment:

"c. Long-term Effectiveness and Permanence. The Proposed Remedy and the capping alternatives provide essentially the same degree of long-term effectiveness and permanence. ..."

"Moreover, adding an incineration component to Alternative 6 does not render Alternative 6 any more effective or permanent than without incineration. ..."

EPA's Response:

An element of long-term effectiveness and permanence includes the ability of a remedy to maintain reliable protection of human health and the environment over time. For the Rose site, capping a portion of the site under any of the capping alternatives does not achieve the same degree of long-term effectiveness and permanence that removal of contaminated material would achieve under Alternative 6 because of the uncertainty in maintaining a cap over a substantially long period of time.

20. Comment:

"d. Reduction of Toxicity, Mobility or Volume Through Treatment. The EPA has indicated that this criterion is included in the NCP to "address[] the

statutory preference for selecting remedial actions that employ treatment technologies that permanently reduce the toxicity, mobility or volume of the hazardous substances as a principal element." 55 Fed. Reg. at 8720-21. As is stated later in these comments, this criterion has already been satisfied at the Site as a result of the incineration of 9.4 million pounds of PCBs, PCB-contaminated material, and other hazardous substances pursuant to the administrative orders."

EPA's Response:

EPA recognizes that a significant amount of PCBs and PCB-contaminated wastes have previously been treated through incineration. However, this fact does not mean the subject criterion has been satisfied and that treatment technologies should not be considered for the remaining contaminated materials at the site. Also, see EPA's response to comment 14.

21. Comment:

"e. Short-term Effectiveness. While it adds no discernable long-term benefit to the overall remediation of the Site, the Proposed Remedy adds notable, quantifiable risks to identified populations over the short-term. As such, the net effect of the Proposed Remedy, in very real terms, is the selection of an overall clean-up program that is less protective and less effective at reducing risks that one that avoids excavation, removal and incineration of soils and concrete. The Proposed Remedy will result in a dramatic increase in risk exposure to workers. Cutting, excavation and removal activities (including segregating and sampling of concrete that would be necessary by the incineration component of the Proposed Remedy), by necessity, will increase potential exposure to workers and will result in greater potential for particulate emissions during the cutting process.

The incineration component of the Proposed Remedy will increase short-term risks even further. In addition to the increased worker exposure during the extra on-site activities required by incineration, increased travel times and distances required by delivery to an off-site incinerator measurably increase short-term exposure risks. Transportation risks can be quantified, based on the expected numbers of loads and travel distances required, and on data developed by the U.S. Department of Transportation. The risks of accident, injury and fatalities will be substantially higher if material must first be transported to an

incinerator and then sent to a TSCA landfill. Of course, no transportation is required under Alternative 4. Moreover, incineration is a dynamic process with many inherent risks. Factors such as incinerator shutdown based on pollution control equipment failure, improper feeds or combustion parameter exceedances would all increase risks associated with incineration. While such risks may be difficult to quantify they are nonetheless real."

EPA's Response:

As stated in previous responses, EPA believes that removal of the contamination from the site under Alternative 6 provides a greater degree of long-term effectiveness and permanence. Although a small unquantified increase in short-term risk may exist to workers onsite, this risk does not represent any real hazard. Any potential increased risk would be eliminated by use of personal protective equipment to prevent actual exposure. Similar precautions to those which were taken during the previous removals would be required, eliminating the potential for actual exposure. Stringent requirements on particulate emissions during the implementation of Alternative 6 would be required to ensure that fugitive dust emissions would not be a source of a hazard to onsite workers during all phases of the remedial action.

In the abstract, transportation of the material to a landfill or incinerator would result in a certain amount of transportation related risk. To date, over 20 million pounds of PCB material have been removed from the Rose site without one instance of a spill or other release resulting in public exposure. Both the capping alternatives and Alternative 6 involve the transportation of contaminated materials from the site. Based upon prior experience, EPA believes that any additional risk which may exist as a result of transporting contaminated materials under Alternative 6 is negligible. The incinerated residue from any incinerator could be treated as non-hazardous and could be disposed of in a solid waste landfill.

The comment does not quantify the risks it associates with the incineration process. Any of the factors resulting in shutdown would be the result of safety equipment features which were insuring the safe and proper operation of the incinerator. EPA believes the remotely potential occurrences identified in the comment do not constitute any real risk. There may be some very slight risk associated with releases which could occur prior to the shutdown of an incinerator in one of the instances identified, but these risks would be extremely small, since safeguards have been established at the incinerators to insure shutdown takes place prior to significant releases.

22. Comment:

"f. Implementability. In terms of their implementability, the Proposed Remedy and the capping alternatives are essentially the same except in one significant respect - the Proposed Remedy will take a longer time to implement. ..."

EPA's Response:

The commentator's estimates in the 'Detailed Statement' that each of the capping alternatives could be implemented in 12 to 24 months. The commentator also states that the FS estimated the offsite incineration time for all the remaining 25 million pounds of contaminated materials at the site under Alternative 6 to be 154 months. The FS time estimate of 154 months allows for the incineration of 162,337.66 pounds of material per month or approximately 81 tons per month. However, implementation of the proposed remedy would not require incineration of all 25 million pounds of contaminated material. The proposed remedy calls for the incineration of only approximately 2 million pounds total, or some 1000 tons total. At the FS estimated destruction rate of 81 tons per month, it would take about 12 and a half months under the proposed remedy to incinerate the contaminated material. The time to accomplish the other work at the site under the proposed remedy, assuming none of it could be done at the same time, would be approximately 12 months. The estimate of time to complete the proposed remedy then becomes a maximum of 24 and a half months as compared to the 154 months estimated in the FS for Alternative 6-offsite incineration. EPA believes that the material to be incinerated could be incinerated at a rate greater than 81 tons per month and that portions of the other work to be accomplished at the site could be done at the same time thereby significantly reducing the maximum 24 and a half months estimate. EPA believes that there is no significant difference between the implementation time between Alternatives 4 and 6.

23. Comment:

"g. Cost. Assuming the cost estimate prepared by Region VII is accurate, the Proposed Remedy will cost more than $13.6 million. By contrast, the cost estimates for the capping alternatives range from $3.6 million to $8.8 million. Alternative 4 is estimated to cost $6.1 million. ..."

EPA's Response:

Although cost is a consideration, it is not the only factor that is considered by EPA in selecting a remedy. Cost is one of the nine criteria that EPA must consider in selecting a remedy. In

selecting the preferred remedy, EPA considered each alternative in light of the nine criteria, including cost. The additional 10 percent increase in cost to incinerate the highly contaminated materials remaining at the site rather than landfilling all the contaminated material is not the only factor to be considered in selecting the final remedy. The additional cost involved in incinerating contaminated materials under the preferred remedy has been considered in conjunction with the requirements of CERCLA and the NCP.

24. Comment:

"...The RCSC understands, however, that the City of Holden has or will object to the Proposed Remedy because, in the City's view, the Proposed Remedy will take much longer to implement than alternatives not involving incineration."

EPA's Response:

This comment was provided in conjunction with comment 16, above, to provide the commentator's view of what the 'community acceptance' criteria would be. Contrary to this comment, City of Holden officials have in fact supported the proposed remedy (see comment 8), indicating the City's preference that all contaminated materials be removed from the site, recognizing that some "hot spots" may require incineration.

25. Comment:

"The Preference For Treatment Does Not Require Further Incineration At This Superfund Site. ... Section 121(b) does not require that the EPA select remedies that utilize treatment."

"... The legislative history of Section 121 counsels against the selection of "foolish, costly remedies" where alternative cost-effective remedies are equally protective:

> This does not require the selection of the "most permanent" remedy available; it is not intended that EPA spend millions of dollars incinerating vast amounts of slightly contaminated materials where other cost-effective alternatives would provide a high degree of permanence and protection of public health and the environment. ... 132 Cong. Rec. H9567 ..."

"... Requiring "some treatment" as part of the Proposed Remedy ignores that at this Superfund site the principal threats have already been addressed through treatment. ... the Proposed Plan calls for the incineration of an estimated 25 million more pounds of soil and concrete to destroy less than eight-tenths of one percent of the PCBs."

"Requiring more incineration to satisfy the treatment "requirement" means Region VII views initial response actions as completely separate environmental clean-up activities that occur at a given site. ..."

EPA's Response:

Region VII does not view the "Preference for Treatment" as being a mandate which requires every remedy to contain treatment. The Region does view this preference as appropriate when treatment is reasonably available to address the principal threats in light of all circumstances and factors, consistent with Agency policies and guidances.

Previous action at the site has resulted in the removal and treatment by incineration of significant amounts of PCB-contaminated wastes. Contrary to the commentator's assertion, all principal threats at the site have not been addressed. EPA guidance defines principal threats at non-restricted/residential sites, such as the Rose site, as being soils and debris with greater than 100 parts per million PCB contamination. It is those materials which the Region has proposed to treat, while recognizing the significant costs associated with the treatment of concrete.

The commentator states that the Proposed Plan calls for the incineration of 25 million pounds of material. The Proposed Plan calls for the treatment of only 8 percent of the 25 million pounds which remain at the site, or approximately 2 million pounds. While only treating 8 percent of the remaining waste at the site, the proposed remedy will treat over 80 percent of the PCBs remaining at the Rose site.

26. Comment:

"The Guidance Document Is Inapplicable And Warrants No Consideration. First, and foremost, the Guidance Document is not legally compelling. ..."

"Reliance on the Guidance Document to justify a proposed remedy that requires incineration as part of Alternative 6 is completely flawed. The only concern in the Guidance Document is contamination levels left

at Superfund sites; once the decision is made to remove contaminated materials, the terms of the Guidance Document are irrelevant. ..."

"... Nevertheless, Region VII's past and continuing failures to understand and interpret properly EPA guidance and requirements necessitates some specific references (with emphasis added):

> In particular, the expectation that principal threats <u>at the site</u> should be treated, whenever practicable, and that consideration should be given to containment of low threat material, forms the basis for assembling alternatives. Principal threats will generally include material contaminated at concentrations exceeding 100 ppm <u>for sites</u> in residential areas and concentrations exceeding 500 ppm <u>for sites</u> in industrial areas (Guidance Document iv, hereafter e.g., "G.D.iv".)
>
> Containment of waste that poses a low, long-term threat or where treatment is impracticable,... Remedies that combine treatment of principal threats with <u>containment</u> and institutional control for treatment residuals and untreated waste (G.D.5)
>
> 1. Identify remedial action response objectives including the preliminary remediation goals but define the appropriate concentrations of PCBs that could <u>remain at the site</u> without management controls.
> 2. Identify general response actions such as excavation and treatment, containment, or in-situ treatment. (Id.)
>
> Determination of the appropriate concentration of PCBs that can remain <u>at a site</u> (remediation goal) under various site-use assumptions. (G.D.6)
>
> The concentration of PCBs in the soil above which some action should be considered (i.e., treatment or containment) will depend primarily on the exposure estimated in the baseline risk assessment based on current and potential future land use. (G.D.27)
>
> The concentration that defines the area over which some action must be taken is the concentration of PCBs that can protectively be <u>left on-site</u> without management controls (G.D.28)

> As described in Section 1, one of the Superfund expectations is that principal threats at a site will be treated whenever practicable and that low-threat materials will be contained and managed (G.D.39)
>
> In some cases it may be appropriate to treat material contaminated at concentrations lower than what would otherwise define the principal threats because it is cost-effective considering the cost of treatment versus the cost of containment, because the site is located in a sensitive area... In other cases, it may be appropriate to contain the principal threats as well as the low-threat material because there are large volumes of contaminated material... (G.D.40)

Each of these provisions (and, indeed, many other) in the Guidance Document illustrates that the Guidance Document is only concerned with action levels and actions taken pertaining to PCB-contaminated materials that will be left at the Superfund site. Once those materials are, as an alternative, removed from the site, the Guidance Document is no longer relevant as to how they are handled. ..."

EPA's Response:

As previously stated in EPA's response to comment 14(3), the guidance document referenced is generally applicable to all actions at Superfund sites with PCB contamination, not only those where onsite containment or treatment is the only remedy to be used.

The Agency's position with respect to the applicability of the subject guidance document is that the guidance document was intended to address all Superfund sites with PCB contamination and that it recommended the treatment of principal threats, regardless if they were taken offsite or treated onsite.

27. Comment:

"Continued Groundwater Monitoring, As Part of the Proposed Remedy, Is Unwarranted and Unnecessary. The Proposed Remedy's inclusion of continued groundwater monitoring as a component of a remedy that proposes excavation and removal of soils and concrete contaminated above 10 ppm is unwarranted. ..."

EPA's Response:

The FS included ground water monitoring in each of its alternatives, with the exception of the no action alternative, Alternative 1. EPA concurred that such monitoring was an essential element of the remedy since there is a potential for contaminants to migrate from the shallow ground water to either the deeper ground water or, more importantly, to nearby surface waters. The RI determined that contamination existed in the shallow ground water. EPA has determined that ground water monitoring is an important element to ensure the proper effectiveness of the remedial action. Ground water monitoring will serve as an early warning that site conditions have changed or unknown factors have arisen or to assure all involved that the remedy has preformed as expected.

SUMMARY:

The Proposed Plan is the preferred remedy for the Martha C. Rose Chemicals Site based upon the following criteria:

Long-term effectiveness:

With minor modifications, Alternative 6 (the preferred remedy in the Proposed Plan) provides the greatest long-term effectiveness with the least intervention by man. The other alternatives include capping options, which would require cap maintenance as well as deed restrictions that would unnecessarily limit the future use of the site.

Short-term effectiveness:

While the short-term effectiveness of the preferred remedy may be somewhat less than Alternatives 1 through 5, actions to mitigate the potential risk of short-term exposures are relatively easy to implement and mitigation should be easily achieved.

Reduction of toxicity, mobility, or volume through treatment:

The preferred remedy does provide some reduction of toxicity through treatment. It should also be noted that a volume reduction of hazardous materials would be achieved through treatment, since once incinerated the incinerator residue may be delisted and treated as non-hazardous, and thereby not requiring final disposal in a TSCA landfill.

Implementability:

The preferred remedy will not take significantly more time to implement than the other alternatives, and in all probability will take the same amount of time.

Cost:

The preferred remedy would cost an estimated $13,600,000, or 10 percent more than the Alternative 6 that was presented in the FS.

State acceptance:

The State of Missouri has not objected to the Proposed Plan and has been involved with its development. The State has indicated its preference that all contaminated materials be removed from the site.

Community acceptance:

The City of Holden supports the Proposed Plan and has stated the City's desire that all contaminated material be removed from the site.

EXPLANATION OF SIGNIFICANT DIFFERENCES
FOR THE RECORD OF DECISION
MARTHA C. ROSE CHEMICALS SITE

Introduction

1. The Martha C. Rose Chemicals site is located in Holden, Missouri.

2. The United States Environmental Protection Agency (EPA) is the lead agency, and the Missouri Department of Natural Resources (MDNR) is the support agency.

3. Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. Section 9617(c), if any remedial action is taken and such action differs in any significant respect from the final remedial plan, EPA is required to publish an explanation of the significant differences and the reasons such changes were made.

4. One component of the final remedial action selected in the Record of Decision (ROD) issued in March 1992 was a requirement for ten years of ground water monitoring to ensure the effectiveness of the remedy that was implemented. Upon review of the Final Remedial Report, ground water monitoring data, the Remedial Investigation Report and other pertinent information contained in the Administrative Record, EPA has reached the conclusion that the ten years of ground water monitoring at the site is no longer necessary since ground water at the site is not an exposure pathway and there appears to be no potential for any adverse effect to human health or the environment from the discharge of the ground water.

5. This ESD will become a part of the Administrative Record.

6. The Administrative Record will be maintained at the Holden City Hall in Holden, Missouri, and is available between 9:00 a.m. and 5:00 p.m. week days. The record will also be kept in the Region 7 EPA Office at 726 Minnesota Avenue, Kansas City, Kansas, and is available for review between 8:00 a.m. and 4:30 p.m.

Summary of Site History, Contamination Problems, and Selected Remedy

1. Site History

The Martha S. Rose Chemicals site is the site of a former polychlorinated biphenyl (PCB) brokerage, processing and treatment facility which operated between 1982 and 1986. The site is located on an estimated 11-acre piece of property and included two large warehouses and a nearby tributary and creek. Following the company's abandonment of the site in March 1986, a group of potentially responsible parties (PRPs), referred to as the Rose Chemicals Steering Committee (RCSC), entered into two CERCLA Administrative Orders on Consent (AOC) for the purpose of conducting necessary removal actions. Work under the two AOCs resulted in the removal of the warehouses' contents, including numerous tanks containing PCB liquids and several million pounds of PCB electrical equipment, and the characterization of the site in a Remedial Investigation and Feasibility Study (RI/FS). Following the public comment period on the June 20, 1991, Proposed Plan, EPA issued the Record of Decision (ROD) on March 6, 1992. On September 2, 1992, EPA issued a CERCLA Section 106(a) Unilateral Administrative Order to members of the RCSC requiring the PRPs to implement the remedial action selected in the ROD. Except for completion of the ten-year ground water monitoring requirement, the remedial actions selected in the ROD have been completed.

2. The site was originally contaminated with PCBs and volatile organic compounds (VOCs). The shallow ground water at the site is contaminated with VOCs. The contamination addressed by the ROD included: 1) PCB contamination in sediment in an intermittent tributary to East Pin Oak Creek and in sediments in East Pin Oak Creek; 2) PCB contamination in surface and subsurface soils at the site; and 3) PCB contamination in the two large warehouses, including concrete floor slabs, insulation, structural components of the buildings and soils beneath the floor slabs. The site has been cleaned up in accordance with the requirements of the ROD. The clean up resulted in the removal of significantly more contaminated soil than was anticipated, exceeding the action levels in the ROD. Ground water monitoring was required to determine the effectiveness of the remedy.

1. The remedy selected in the ROD called for the following:

   a. Removal and off-site treatment and/or disposal of all PCB-contaminated soil;

   b. Demolition and removal and off-site treatment and/or disposal of all PCB-contaminated concrete slabs and support structures;

   c. Removal and off-site treatment and/or disposal of all PCB-contaminated sediment in adjacent watercourses to bedrock or four feet, whichever was greater;

   d. Placement of a minimum ten-inch clean soil cover over the eastern half of the site. This is the area where the soil and building removal took place;

   e. Contouring and seeding the site;

   f. Restricting the construction of ground water wells on the site, except for monitoring purposes; and

   g. Monitoring the ground water for ten years to ensure that the remedy did not release unknown pockets of PCB contamination.

Description of Significant Differences and the Basis for those Differences

1. The RCSC has completed the actions required in the ROD with the exception of the required ground water monitoring for ten years. The primary objectives of the monitoring program were to: 1) confirm that the concentrations of PCBs and VOCs had not increased in the ground water at the site; and 2) confirm that no PCBs or VOCs had mobilized by the remediation activities at the site. By letters dated December 1, 1995, and November 18, 1996, the RCSC submitted a proposal to amend the Remedial Action Work Plan to terminate the ground water monitoring program and decommission the monitoring wells at the site. Based upon the RCSC's evaluation of the two rounds of sampling that followed site remediation, it was concluded that the objectives of ground water program had been reached and that there was no reasonably likelihood of a threat to human

health or the environment from any remaining contaminants at the site. This evaluation was based upon several factors, including:

a. To ensure the soil clean-up level of ten parts per million (ppm) PCBs at the site was achieved, it was necessary to excavate soils to concentrations lower than ten ppm; typically resulting in a clean-up level of approximately one ppm. Areas at the site with VOC contamination were also excavated. Residual contaminates in site soils will continue to migrate via the perched water to an unnamed tributary and to East Pin Oak Creek in small quantities insufficient to cause exceedences of the ambient water quality criteria or other unacceptable risks;

b. The Baseline Risk Assessment (BRA) indicated that the potential threats to human health and the environment at the site came from potential exposures to PCB contamination in soils, sediment, and buildings. These areas have been excavated or removed. The RI/FS and BRA concluded that ground water was not a viable pathway for potential exposure for any current or future use scenario because of the very low flow rates in the surficial aquifer. In addition, a letter dated March 12, 1991, from the Missouri Department of Natural Resources (MDNR) states that the shallow groundwater at this site is not an useable aquifer; and

c. In site sampling events, PCBs were detected infrequently at low concentrations. In general, VOCs, that had originally been detected in the ground water at the site, were detected in similar or lower concentrations in subsequent sampling events. Because the ground water is not a viable pathway for exposure due to the low flow rates in the surficial aquifer, and because deed restrictions have been placed on site property to prohibit the installation of wells for any purpose other than monitoring, the presence of any low concentrations of PCBs or VOCs in the shallow aquifer does not constitute a significant threat to human health or the environment.

2. The only significant difference between the remedy as presented in the ROD and this action is to terminate the ground water monitoring.

Support Agency Comment

The State of Missouri does not concur with the proposal to terminate the ground water monitoring. The following is a summary of the state's comments and EPA's responses to those comments.

1. The Missouri Department of Health (MDOH) has expressed concern that the site was never tested for dioxins and furans. All PCB-contaminated materials with levels above ten ppm have been removed from the site. Based upon available scientific literature and the degree of cleanup that was conducted by the RCSC, the maximum level of dioxins and furans that can be expected to remain at the site, if any, would be approximately 0.01 ppb tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) equivalents or two orders of magnitude below the clean-up level for dioxin.

2. A second issue concerns the VOCs that were detected in site soils and whether source removal for VOCs was accomplished. Although no stated source removal for VOCs was specifically incorporated into the Remedial Design, the PCB and VOC contamination was generally co-located and significant soil removal did occur. All areas where surface and subsurface soils were found to be contaminated by VOCs were excavated to a depth of at least ten inches and backfilled. VOCs were not considered to be contaminants of significant concern at the site due to the relative low levels found in the soils and the fact that the ground water was not considered to be a completed pathway for exposure. Since any remaining VOCs will be at depth, direct contact is not a threat; and it has already been determined that the ground water is not a completed exposure route for VOCs. VOC contamination does not present a risk at this site. Subsurface soil analysis revealed levels of VOC contamination generally a magnitude or greater less than EPA's removal action limits. Since ground water is not a completed exposure route, EPA does not consider the monitoring of the ground water for VOCs as necessary to protect human health and the environment.

3. Another area of concern raised by the state was the low-level PCB contamination located along McKissock Street, at which no excavation was performed. Eight grids were sampled adjacent to McKissock Street. Sample analytical results indicated PCBs in three grids were below detection limits. Two grids each had total PCBs of 0.6 ppm each. The other three grids had 1.8 ppm, 3.4 ppm, and 2.1 ppm. The trigger level for cleanup of soils at residential properties as

stated in the RCSC is ten ppm, which is consistent with EPA's PCB Spill Cleanup Policy contained in Subpart G of 40 C.F.R. Part 761. The EPA believes the low levels of PCBs located along McKissock Street do not present a risk to human health or the environment warranting a cleanup and has no bearing on the decision whether to continue or terminate ground water monitoring.

4. The state has expressed concern that past sampling events at the site may have been inconsistent in terms of not collecting samples from all wells during each sampling event and not analyzing each sample for all PCB aroclors. The EPA does not believe any substantial inconsistency in sampling or analysis has occurred which would result in unknown risks remaining onsite. Early on, only the two aroclors (1242 and 1260) were the target for PCB analysis. Because of the nature of the material sent to the site, these were the only aroclors expected to be found at the site. When sufficient ground water was present to allow for sampling from site wells, these two were consistently analyzed. For the 1996 ground water monitoring events, samples were analyzed for all PCB aroclors. During each round of sampling, an attempt was made to acquire samples for each of the contaminants of interest. PCBs were sampled if sufficient water existed in a well for sampling. In some instances, a well was dry and no samples were taken. In other instances, there was not sufficient water to collect filtered samples; and in other instances, there was only sufficient water to sample for the VOCs. The lack of sufficient ground water to collect required samples is an illustration of the limited quantity of ground water in the overburden at the site.

5. The state has raised an issue as to whether or not PCBs have contaminated the shallow ground water system because early sampling and analysis revealed PCBs in the ground water from most of the wells. The RCSC and EPA believe the PCBs found in these samples were caused by PCB-contaminated dust/soil entering the samples while they were being obtained. The state's position has been that since air monitoring at the site did not detect PCBs, the presence of PCBs in water samples could not have been the result of surface dust/soil cross-contamination. The two conditions are not mutually exclusive. The early samples were taken and handled close to the ground in the area of the monitoring wells. The soils around the monitoring wells were contaminated with

PCBs. The fact that the monitoring devices in the breathing zone did not pick up contaminated dust from the site does not mean that when the sampling event was taking place the ground level dust/dirt soil was not disturbed sufficiently to contaminate the sample. The absence of PCB contamination in well samples after extreme measures were taken to limit such cross contamination supports the RCSC's and EPA's conclusion that the early ground water samples likely became cross-contaminated with surface dust/soil.

4. Only one well on the site, MW211, demonstrates an increase in VOCs in the ground water, and for only one contaminant, trichloroethylene (TCE). The increase appears to reverse with the 6/96 sample. The ground water analytical values for TCE were: in 1989, 180 ppb; in 7/95, non-detect; in 10/95, 380 ppb; in 3/96, 720 ppb; and in 6/96, 550 ppb. In all other ground water wells, VOCs are decreasing or remaining at the same levels. Even though some wells showed similar levels of VOCs over time, there still is no threat to human health or the environment due to the lack of sufficient exposure to any receptor. The lack of ground water in the monitoring wells which has prevented consistent sampling during implementation of the monitoring system program also demonstrates that ground water at this site does not present a completed pathway for exposure.

Affirmation of the Statutory Determinations

Considering the new information that has been developed and the changes that have been made to the selected remedy, the EPA believes that the remedy remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

Public Participation Activities

1. As previously noted, the Administrative Record containing the information relied upon in reaching the decision to terminate the ten-year ground water monitoring requirement will be available at the Holden City Hall and EPA's Region VII Office.

1. At this time, a public information meeting to discuss this Explanation of Significant Difference is not planned. However, EPA may choose to hold a public meeting for the decision contained herein if sufficient public interest is expressed for such an informational meeting.

ESD approval _____ 11-25-98
Dennis Grams, P.E.
Regional Administrator
Date

ESD disapproval _____ _____
Dennis Grams, P.E.
Regional Administrator
Date

LEAVE OPEN Circled 201, 204 ?, 210, 211, 213

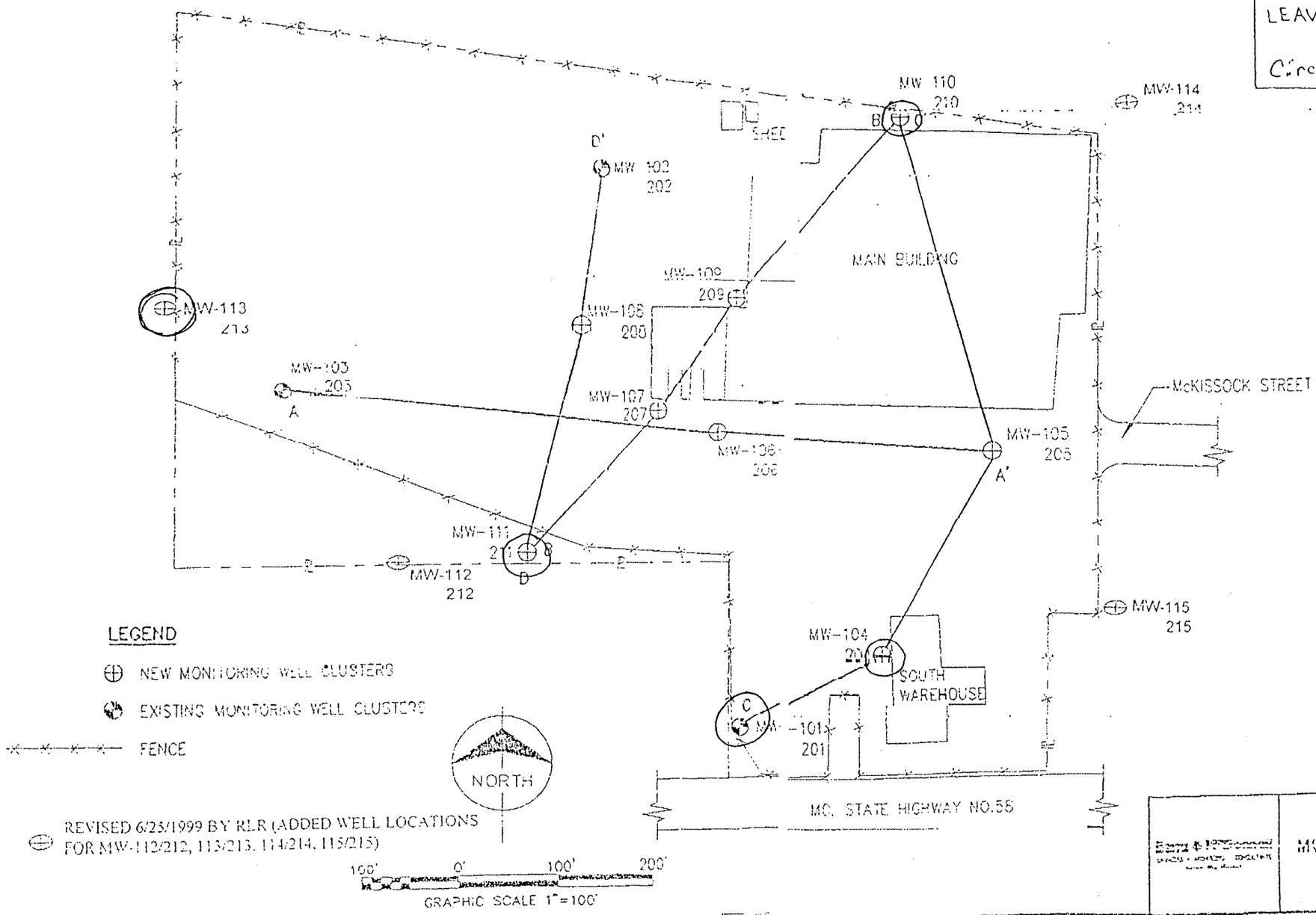

FIGURE 1-1
MONITORING WELL AND GEOLOGIC PROFILE LOCATIONS

APPENDIX E
SITE PHOTOGRAPHS

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 1
Direction: North	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 2
Direction: Northeast	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 3
Direction: East	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 4
Direction: Southeast	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 5
Direction: South	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 6
Direction: Southwest	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 7
Direction: West	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the subject property.	Photograph Number: 8
Direction: Northwest	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the entrance from McKissock Street to the subject property.	Photograph Number: 9
Direction: West	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing residential and commercial properties on West McKissock Street east of the subject property.	Photograph Number: 10
Direction: East	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing a residential property and the maintenance facility adjacent to the east of the subject property on North Buffalo.	Photograph Number: 11
Direction: North	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the maintenance facility adjacent to the east of the subject property.	Photograph Number: 12
Direction: West	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing the environmental center on the northern portion of the subject property.	Photograph Number: 13
Direction: West	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing ASTs, drums, and plastic containers at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 14
Direction: East	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing drums and stained soil and gravel at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 15
Direction: N/A	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing stained drums and standing water/liquid in the containment area of the ASTs at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 16
Direction: N/A	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing stained drums in the containment area of the ASTs at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 17
Direction: N/A	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing drums, appliances, and other material at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 18
Direction: South	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing stained drums and gravel/soil at the maintenance facility adjacent to the east of the subject property.	Photograph Number: 19
Direction: N/A	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing tires on the northern portion of the subject property.	Photograph Number: 20
Direction: South-southwest	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing vehicles and soil and rock piles on the northern portion of the subject property.	Photograph Number: 21
Direction: North-northwest	Photographer: Jon DeBruine	Date: 11/3/2016

Client: Missouri Department of Natural Resources	Description: Photograph showing stained gravel and soil on the northern portion of the subject property.	Photograph Number: 22
Direction: East	Photographer: Jon DeBruine	Date: 11/3/2016

APPENDIX F

EDR RADIUS MAP WITH GEOCHECK REPORT

Holden Business Park
500 West Mckissock Street
Holden, MO 64040

Inquiry Number: 4767920.2s
October 31, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	79
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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-11
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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 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

500 WEST MCKISSOCK STREET
HOLDEN, MO 64040

COORDINATES

Latitude (North):	38.7191500 - 38˚ 43' 8.94''
Longitude (West):	93.9944300 - 93˚ 59' 39.94''
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	413548.0
UTM Y (Meters):	4285873.0
Elevation:	841 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6723071 HOLDEN, MO
Version Date:	2014
Southwest Map:	6723599 KINGSVILLE, MO
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140724
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
500 WEST MCKISSOCK STREET
HOLDEN, MO 64040

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ROSE, MARTHA CHEMICA	500 W MCKISSOCK	SEMS-ARCHIVE, US ENG CONTROLS, US INST CONTROL,...		TP
A2	PCB ELIMINATORS	500 WEST MCKISSOCK S	FINDS, ECHO		TP
A3	MARTHA C. ROSE CHEMI	500 MCKISSOCK ST	FINDS		TP
A4	HOLDEN BUSINESS PARK	500 W. MCKISSOCK ST.	MO SMARS		TP
A5	MARTHA C. ROSE CHEMI	500 WEST MCKISSOCK	MO SMARS		TP
A6	ROSE, MARTHA CHEMICA	500 W MCKISSOCK	ICIS		TP
7		401 W MCKISSOCK ST	EDR Hist Cleaner	Lower	224, 0.042, ESE
B8	CASEYS GENERAL STORE	400 W 2ND ST	MO AST, RCRA NonGen / NLR, FINDS, ECHO	Lower	384, 0.073, SSE
B9	CASEYS GENERAL STORE	400 W SECOND	MO LUST, MO UST	Lower	384, 0.073, SSE
C10	FASTOP CONVENIENCE	303 W 2ND	MO LUST, MO UST	Higher	685, 0.130, SE
C11	BREAK TIME # 3140	200 S OLIVE	MO LUST, MO UST, MO AST	Higher	733, 0.139, SE
C12	PHELPS ENTERPRISES	200 S OLIVE	RCRA NonGen / NLR	Higher	733, 0.139, SE
13	BULK FUEL PLANT	301 W MADISON	MO LAST	Lower	804, 0.152, NE
D14	HOLDEN MANUFACTURING	216 W 2ND ST	RCRA NonGen / NLR	Higher	844, 0.160, ESE
D15	BREAK TIME CONVENIEN	215 W 2ND ST	MO LUST, MO UST	Higher	862, 0.163, ESE
D16	BREAK TIME #3040	215 W 2ND ST	RCRA NonGen / NLR	Higher	862, 0.163, ESE
E17	BENSON AUTO SERVICES	203 N LEXINGTON	RCRA NonGen / NLR	Lower	890, 0.169, NNE
E18	J.R.'S USED TRUCKS	203 NORTH LEXINGTON	US BROWNFIELDS, FINDS	Lower	890, 0.169, NNE
E19	J.R.'S USED TRUCKS	203 NORTH LEXINGTON	MO SMARS	Lower	890, 0.169, NNE
20	MIDWEST OIL COMPANY	103 W MADISON	MO UST	Higher	1168, 0.221, East
21	CHANEY SERVICE (SINC	205 S PINE	MO LUST, MO UST	Higher	1924, 0.364, ESE
22	SOUTHERN STAR CENTRA		MO VCP, MO SMARS	Lower	2457, 0.465, North

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
ROSE, MARTHA CHEMICA 500 W MCKISSOCK HOLDEN, MO 64040	SEMS-ARCHIVE Site ID: 0701206 EPA Id: MOD980633069	MOD980633069
	US ENG CONTROLS EPA ID:: MOD980633069 EPA ID:: MOD980633069	
	US INST CONTROL EPA ID:: MOD980633069	
	RCRA NonGen / NLR EPA ID:: MOD980633069	
	ROD EPA ID:: MOD980633069	
	PRP NY MANIFEST EPA ID: MOD980633069	
PCB ELIMINATORS 500 WEST MCKISSOCK S HOLDEN, MO 64040	FINDS Registry ID:: 110015917686	N/A
	ECHO	
MARTHA C. ROSE CHEMI 500 MCKISSOCK ST HOLDEN, MO 64040	FINDS Registry ID:: 110042721917	N/A
HOLDEN BUSINESS PARK 500 W. MCKISSOCK ST. HOLDEN, MO 64093	MO SMARS	N/A
MARTHA C. ROSE CHEMI 500 WEST MCKISSOCK HOLDEN, MO 64040	MO SMARS	N/A
ROSE, MARTHA CHEMICA 500 W MCKISSOCK HOLDEN, MO 64040	ICIS FRS ID:: 110015917686	N/A

EXECUTIVE SUMMARY

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
SEMS ..... Superfund Enterprise Management System

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

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

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

MO SHWS ..... Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites

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

MO SWF/LF ..... Permitted Facility List

State and tribal leaking storage tank lists

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

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

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

State and tribal institutional control / engineering control registries

MO AUL ..... Sites with Controls

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

MO BROWNFIELDS ..... Brownfields Site List

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

MO HIST LF ..... Solid Waste Facility Database List
MO SWRCY ..... Solid Waste Recycling Facilities
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
MO CDL ..... Environmental Emergency Response System
MO DEL SHWS ..... Registry Sites Withdrawn or Deleted
US CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS 2 ..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
MO SPILLS ..... Environmental Response Tracking Database
MO SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act

EXECUTIVE SUMMARY

TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PADS	PCB Activity Database System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
MO AIRS	Permit Facility Listing
MO COAL ASH	Coal Ash Disposal Sites
MO DRYCLEANERS	Drycleaners in Missouri Listing
MO Financial Assurance	Financial Assurance Information Listing
MO MINES	Industrial Mineral Mines Database
MO NPDES	Permitted Facility Listing
MO RRC	Certified Hazardous Waste Resource Recovery Facilities
MO UIC	Underground Injection Wells Database
FUELS PROGRAM	EPA Fuels Program Registered Listing
ABANDONED MINES	Abandoned Mines

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

MO RGA HWS	Recovered Government Archive State Hazardous Waste Facilities List
MO RGA LF	Recovered Government Archive Solid Waste Facilities List
MO RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

EXECUTIVE SUMMARY

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

State and tribal leaking storage tank lists

MO LAST: A listing of leaking aboveground storage tanks.

A review of the MO LAST list, as provided by EDR, and dated 06/07/2016 has revealed that there is 1 MO LAST site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BULK FUEL PLANT Facility Id: ST3007620 Date Of NFA Letter From DNR: 2007-12-11 00:00:00	301 W MADISON	NE 1/8 - 1/4 (0.152 mi.)	13	48

MO LUST: Leaking Underground Storage Tanks.

A review of the MO LUST list, as provided by EDR, and dated 06/07/2016 has revealed that there are 5 MO LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FASTOP CONVENIENCE Facility Id: ST5700061	***303 W 2ND***	***SE 1/8 - 1/4 (0.130 mi.)***	***C10***	***35***
BREAK TIME # 3140 Facility Id: ST0007777 Date Of NFA Letter From DNR: 2009-05-27 00:00:00	***200 S OLIVE***	***SE 1/8 - 1/4 (0.139 mi.)***	***C11***	***37***
BREAK TIME CONVENIEN Facility Id: ST0000799	***215 W 2ND ST***	***ESE 1/8 - 1/4 (0.163 mi.)***	***D15***	***50***
CHANEY SERVICE (SINC Facility Id: ST0007745	***205 S PINE***	***ESE 1/4 - 1/2 (0.364 mi.)***	***21***	***72***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CASEYS GENERAL STORE Facility Id: ST0010485	***400 W SECOND***	***SSE 0 - 1/8 (0.073 mi.)***	***B9***	***25***

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

MO UST: Underground Storage Tank Information.

A review of the MO UST list, as provided by EDR, and dated 06/07/2016 has revealed that there are 5 MO UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FASTOP CONVENIENCE Facility Id: ST5700061	***303 W 2ND***	***SE 1/8 - 1/4 (0.130 mi.)***	***C10***	***35***
BREAK TIME # 3140 Facility Id: ST0007777 Tank Status: Removed Tank Status: Curently in use	***200 S OLIVE***	***SE 1/8 - 1/4 (0.139 mi.)***	***C11***	***37***
BREAK TIME CONVENIEN Facility Id: ST0000799 Tank Status: Removed	***215 W 2ND ST***	***ESE 1/8 - 1/4 (0.163 mi.)***	***D15***	***50***
MIDWEST OIL COMPANY Facility Id: ST0018944	103 W MADISON	E 1/8 - 1/4 (0.221 mi.)	20	70

Lower Elevation	Address	Direction / Distance	Map ID	Page
CASEYS GENERAL STORE Facility Id: ST0010485 Tank Status: Removed Tank Status: Curently in use	***400 W SECOND***	***SSE 0 - 1/8 (0.073 mi.)***	***B9***	***25***

MO AST: Aboveground Petroleum Storage.

A review of the MO AST list, as provided by EDR, and dated 06/16/2016 has revealed that there are 2 MO AST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BREAK TIME # 3140 Facility Id: 2545	***200 S OLIVE***	***SE 1/8 - 1/4 (0.139 mi.)***	***C11***	***37***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CASEYS GENERAL STORE Facility Id: 2538	***400 W 2ND ST***	***SSE 0 - 1/8 (0.073 mi.)***	***B8***	***23***

State and tribal voluntary cleanup sites

MO VCP: Voluntary Cleanup Program Site Listing.

A review of the MO VCP list, as provided by EDR, and dated 06/23/2016 has revealed that there is 1 MO VCP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOUTHERN STAR CENTRA		***N 1/4 - 1/2 (0.465 mi.)***	***22***	***78***
Facility Status: Cert. of Completion Issued				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/21/2016 has revealed that there is 1 US BROWNFIELDS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
J.R.'S USED TRUCKS	***203 NORTH LEXINGTON***	***NNE 1/8 - 1/4 (0.169 mi.)***	***E18***	***67***

Other Ascertainable Records

RCRA NonGen / NLR: 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 / NLR list, as provided by EDR, and dated 06/21/2016 has revealed that there are 5 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PHELPS ENTERPRISES	200 S OLIVE	SE 1/8 - 1/4 (0.139 mi.)	C12	47
HOLDEN MANUFACTURING	216 W 2ND ST	ESE 1/8 - 1/4 (0.160 mi.)	D14	49
BREAK TIME #3040	215 W 2ND ST	ESE 1/8 - 1/4 (0.163 mi.)	D16	64

Lower Elevation	Address	Direction / Distance	Map ID	Page
CASEYS GENERAL STORE	***400 W 2ND ST***	***SSE 0 - 1/8 (0.073 mi.)***	***B8***	***23***
BENSON AUTO SERVICES	203 N LEXINGTON	NNE 1/8 - 1/4 (0.169 mi.)	E17	66

MO SMARS: SMARS currently houses information for Superfund, Federal Facility, Brownfields Voluntary Cleanup Program and Missouri's other state response programs.

A review of the MO SMARS list, as provided by EDR, and dated 06/23/2016 has revealed that there are 2 MO SMARS sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
J.R.'S USED TRUCKS	203 NORTH LEXINGTON	NNE 1/8 - 1/4 (0.169 mi.)	E19	70
SOUTHERN STAR CENTRA		***N 1/4 - 1/2 (0.465 mi.)***	***22***	***78***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Cleaner: 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there is 1 EDR Hist Cleaner site within approximately 0.125 miles of the target property.

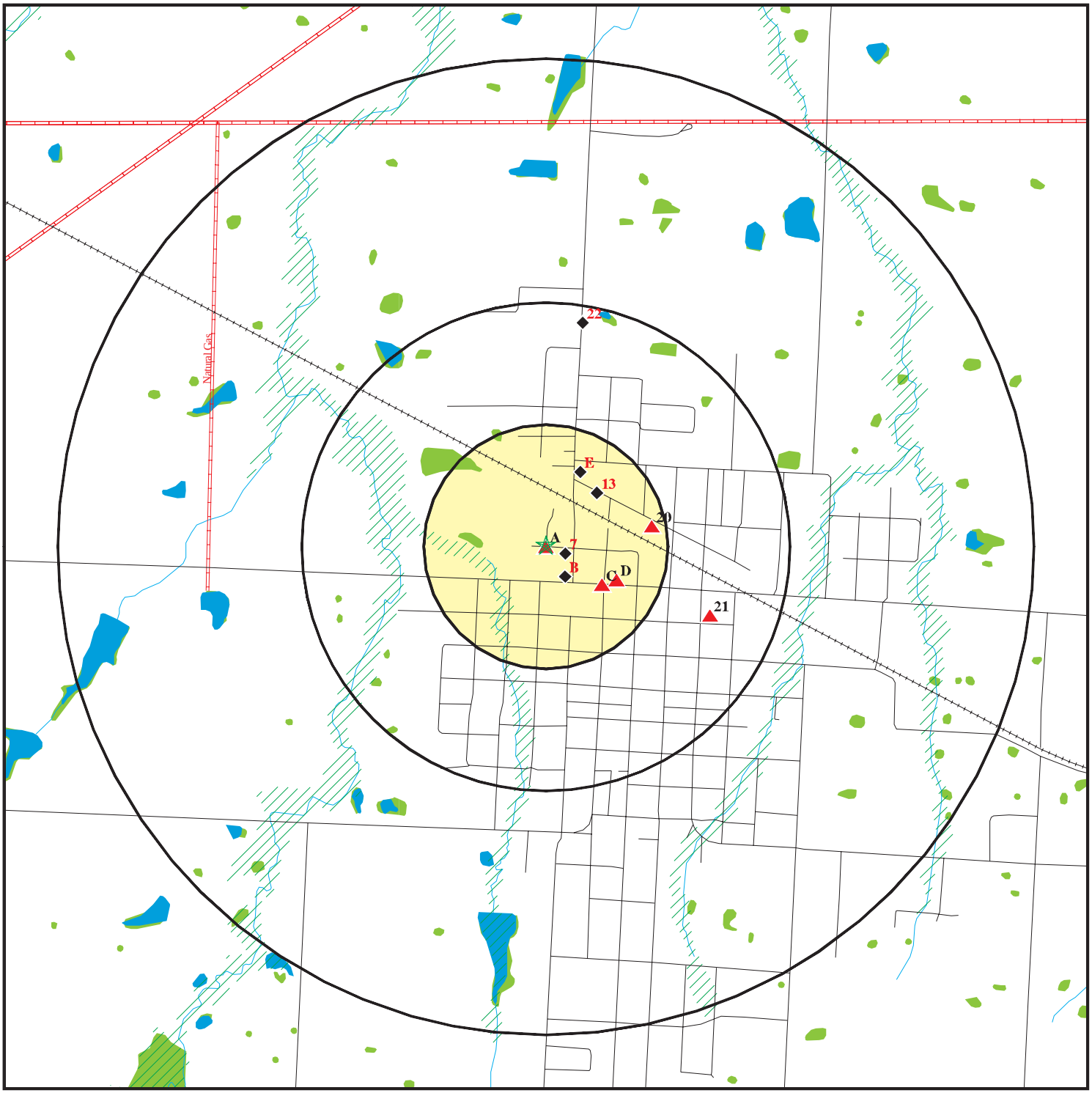
Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	401 W MCKISSOCK ST	ESE 0 - 1/8 (0.042 mi.)	7	23

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
HOLDEN POND TRANSFORMERS	SEMS-ARCHIVE

OVERVIEW MAP - 4767920.2S



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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: Holden Business Park	CLIENT: Seagull Env. Technologies
ADDRESS: 500 West Mckissock Street Holden MO 64040	CONTACT: Jon Debruine
LAT/LONG: 38.71915 / 93.99443	INQUIRY #: 4767920.2s DATE: October 31, 2016 3:40 pm

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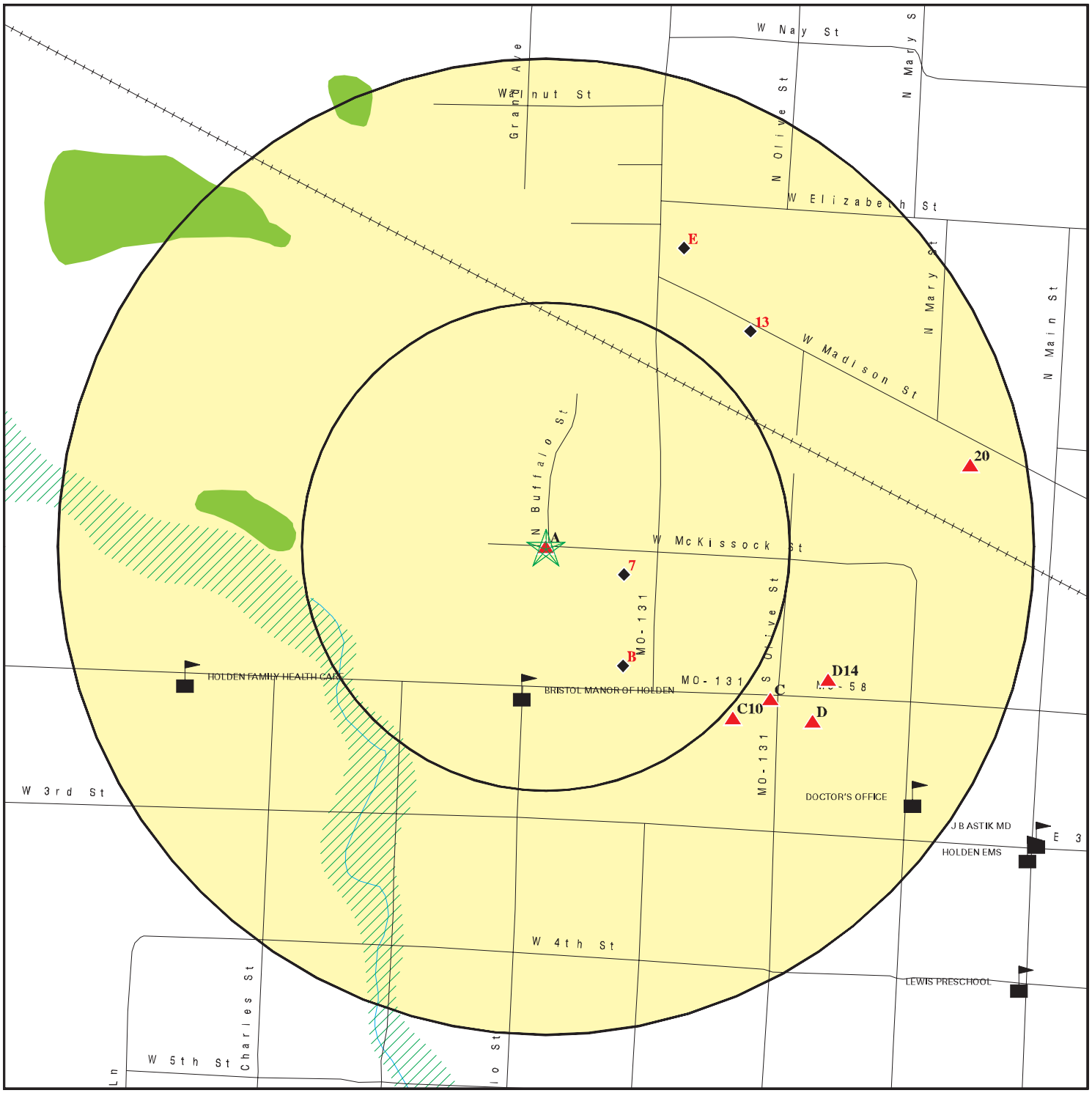
DETAIL MAP - 4767920.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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: Holden Business Park	CLIENT: Seagull Env. Technologies
ADDRESS: 500 West Mckissock Street Holden MO 64040	CONTACT: Jon Debruine
LAT/LONG: 38.71915 / 93.99443	INQUIRY #: 4767920.2s DATE: October 31, 2016 3:43 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 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								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500	1	0	0	0	NR	NR	1
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
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	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500	1	0	0	0	NR	NR	1
US INST CONTROL	0.500	1	0	0	0	NR	NR	1
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
MO SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
MO SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
MO LAST	0.500		0	1	0	NR	NR	1
MO LUST	0.500		1	3	1	NR	NR	5
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MO UST	0.250		1	4	NR	NR	NR	5
MO AST	0.250		1	1	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
MO AUL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
MO VCP	0.500		0	0	1	NR	NR	1
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
MO BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	1	0	NR	NR	1
Local Lists of Landfill / Solid Waste Disposal Sites								
MO HIST LF	0.500		0	0	0	NR	NR	0
MO SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
MO CDL	TP		NR	NR	NR	NR	NR	0
MO DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
MO SPILLS	TP		NR	NR	NR	NR	NR	0
MO SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250	1	1	4	NR	NR	NR	6
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000	1	0	0	0	0	NR	1
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP	1	NR	NR	NR	NR	NR	1
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP	1	NR	NR	NR	NR	NR	1
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP	2	NR	NR	NR	NR	NR	2
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
MO AIRS	TP		NR	NR	NR	NR	NR	0
MO COAL ASH	0.500		0	0	0	NR	NR	0
MO DRYCLEANERS	0.250		0	0	NR	NR	NR	0
MO Financial Assurance	TP		NR	NR	NR	NR	NR	0
NY MANIFEST	0.250	1	0	0	NR	NR	NR	1
MO MINES	0.250		0	0	NR	NR	NR	0
MO NPDES	TP		NR	NR	NR	NR	NR	0
MO RRC	TP		NR	NR	NR	NR	NR	0
MO SMARS	0.500	2	0	1	1	NR	NR	4
MO UIC	TP		NR	NR	NR	NR	NR	0
ECHO	TP	1	NR	NR	NR	NR	NR	1
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		1	NR	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
MO RGA HWS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MO RGA LF	TP		NR	NR	NR	NR	NR	0
MO RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		13	5	15	3	0	0	36

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1	**ROSE, MARTHA CHEMICAL CO**	**SEMS-ARCHIVE**	**1000199493**
Target	**500 W MCKISSOCK**	**US ENG CONTROLS**	**MOD980633069**
Property	**HOLDEN, MO 64040**	**US INST CONTROL**	
		RCRA NonGen / NLR	
	Site 1 of 6 in cluster A	**ROD**	
		PRP	
Actual:		**NY MANIFEST**	
841 ft.			

SEMS-ARCHIVE:

Site ID:	701206
EPA ID:	MOD980633069
Federal Facility:	N
NPL:	Not on the NPL
Non NPL Status:	Referred to Removal - NFRAP

Following information was gathered from the prior CERCLIS update completed in 10/2013:

Site ID:	0701206
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	Referred to Removal - NFRAP

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID:	13024133.00000
Person ID:	7271582.00000

CERCLIS-NFRAP Site Alias Name(s):

Alias Name:	PCB ELIMINATORS
Alias Address:	Not reported MO
Alias Name:	CAROLIN COMPANY
Alias Address:	Not reported MO
Alias Name:	AMERICAN STEEL
Alias Address:	Not reported MO

Program Priority:

Description:	GAO Survey (RCED-99-22B)

CERCLIS-NFRAP Assessment History:

Action:	UNILATERAL ADMIN ORDER
Date Started:	/ /
Date Completed:	09/02/92
Priority Level:	Not reported
Action:	NEGOTIATION (GENERIC)
Date Started:	05/05/92
Date Completed:	09/02/92
Priority Level:	Not reported
Action:	Special Notice Issued
Date Started:	/ /
Date Completed:	05/05/92
Priority Level:	Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Action: SITE INSPECTION
Date Started: / /
Date Completed: 12/06/89
Priority Level: Referred to Removal, no further Rmdl Asmt

Action: Lodged By DOJ
Date Started: / /
Date Completed: 06/06/01
Priority Level: Not reported

Action: RECORD OF DECISION
Date Started: / /
Date Completed: 03/06/92
Priority Level: Final Remedy Selected at Site

Action: POTENTIALLY RESPONSIBLE PARTY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started: 11/12/87
Date Completed: 03/06/92
Priority Level: Not reported

Action: LITIGATION (GENERIC)
Date Started: 06/20/86
Date Completed: 01/07/87
Priority Level: Not reported

Action: DISCOVERY
Date Started: / /
Date Completed: 05/07/86
Priority Level: Not reported

Action: ARCHIVE SITE
Date Started: / /
Date Completed: 04/11/02
Priority Level: Not reported

Action: REMOVAL
Date Started: 05/23/86
Date Completed: 08/12/86
Priority Level: Cleaned up

Action: ADMINISTRATIVE ORDER ON CONSENT
Date Started: / /
Date Completed: 11/12/86
Priority Level: Not reported

Action: NEGOTIATION (GENERIC)
Date Started: 04/15/86
Date Completed: 11/12/86
Priority Level: Not reported

Action: POTENTIALLY RESPONSIBLE PARTY REMOVAL
Date Started: 10/20/86
Date Completed: 11/12/87
Priority Level: Cleaned up

Action: POTENTIALLY RESPONSIBLE PARTY REMEDIAL DESIGN

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Date Started: 12/23/92
Date Completed: 11/12/93
Priority Level: Not reported

Action: LITIGATION (GENERIC)
Date Started: 12/30/93
Date Completed: 11/14/94
Priority Level: Not reported

Action: NON-NATIONAL PRIORITIES LIST POTENTIALLY RESPONSIBLE PARTY SEARCH
Date Started: 03/30/89
Date Completed: 08/15/89
Priority Level: Search Complete, Viable PRPs

Action: OPERATIONAL & FUNCTIONAL
Date Started: / /
Date Completed: 02/15/95
Priority Level: Not reported

Action: PREPARATION OF COST DOCUMENT PACKAGE
Date Started: 02/26/87
Date Completed: 01/17/90
Priority Level: Not reported

Action: POTENTIALLY RESPONSIBLE PARTY REMEDIAL ACTION
Date Started: 11/12/93
Date Completed: 02/22/96
Priority Level: Not reported

Action: CLOSE OUT REPORT
Date Started: / /
Date Completed: 02/22/96
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 01/22/87
Priority Level: Low priority for further assessment

Action: ADMINISTATIVE/VOLUNTARY COST RECOVERY
Date Started: / /
Date Completed: 04/23/96
Priority Level: Not reported

Action: NEGOTIATION (GENERIC)
Date Started: 05/15/86
Date Completed: 05/23/86
Priority Level: Not reported

Action: POTENTIALLY RESPONSIBLE PARTY REMOVAL
Date Started: 04/01/86
Date Completed: 05/23/86
Priority Level: Cleaned up

Action: UNILATERAL ADMIN ORDER
Date Started: / /
Date Completed: 05/23/86

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Priority Level: Not reported

Action: Explanation Of Significant Differences
Date Started: / /
Date Completed: 11/25/98
Priority Level: Not reported

Action: POTENTIALLY RESPONSIBLE PARTY REMOVAL
Date Started: 11/12/87
Date Completed: 10/25/88
Priority Level: Cleaned up

Action: UNILATERAL ADMIN ORDER
Date Started: / /
Date Completed: 09/26/86
Priority Level: Not reported

Action: CONSENT DECREE
Date Started: / /
Date Completed: 08/27/01
Priority Level: Not reported

Action: NEGOTIATION (GENERIC)
Date Started: 08/09/94
Date Completed: 09/27/00
Priority Level: Not reported

Action: NEGOTIATION (GENERIC)
Date Started: 07/12/87
Date Completed: 10/29/87
Priority Level: Not reported

Action: ADMINISTRATIVE ORDER ON CONSENT
Date Started: / /
Date Completed: 10/29/87
Priority Level: Not reported

Action: STATE SUPPORT AGENCY COOPERATIVE AGREEMENT
Date Started: 06/16/89
Date Completed: 09/30/01
Priority Level: Not reported

US ENG CONTROLS:
EPA ID: MOD980633069
Site ID: 0701206
Name: ROSE, MARTHA CHEMICAL CO
Address: 500 W MCKISSOCK
HOLDEN, MO 64040
EPA Region: 07
County: JOHNSON
Event Code: Not reported
Actual Date: 11/30/1998
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

GIS Lat/Long Sequence:Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: Explanation Of Significant Differences
Action Completion date: 11/25/1998
Operable Unit: 02
Contaminated Media : Groundwater
Engineering Control: Non-fundamental change (ESD)
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description:Not reported
GIS Lat/Long Sequence:Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Decontamination
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description:Not reported
GIS Lat/Long Sequence:Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Demolition
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description:Not reported
GIS Lat/Long Sequence:Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description:Not reported
GIS Lat/Long Sequence:Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Incineration
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Recycling
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Buildings/Structures
Engineering Control: Residuals Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Groundwater
Engineering Control: Monitoring
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Sediment
Engineering Control: Dewatering
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Sediment
Engineering Control: Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Sediment
Engineering Control: Excavation
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Excavation
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Incineration
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Soil Cover
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Surface Water
Engineering Control: Carbon Adsorption
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Surface Water
Engineering Control: Discharge
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Surface Water
Engineering Control: Extraction
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/06/1992
Operable Unit: 02
Contaminated Media : Surface Water
Engineering Control: Residuals Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

US INST CONTROL:
EPA ID: MOD980633069
Site ID: 0701206
Name: ROSE, MARTHA CHEMICAL CO
Action Name: RECORD OF DECISION
Address: 500 W MCKISSOCK
HOLDEN, MO 64040
EPA Region: 07
County: JOHNSON
Event Code: Not reported
Inst. Control: Deed Restriction
Actual Date: 03/31/1992
Complet. Date: 03/06/1992
Operable Unit: 02
Contaminated Media : Groundwater
Contact Name : Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Contact Phone and Ext : Not reported
Latitude : Not reported
Longitude : Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

RCRA NonGen / NLR:
Date form received by agency: 08/30/1996
Facility name: MARTHA ROSE CHEM CO DBA PCB ELIM INC
Facility address: 500 W MCKISSOCK
HOLDEN, MO 64040
EPA ID: MOD980633069
Mailing address: CHARLOTTE ST
KANSAS CITY, MO 64040
Contact: CHRISTOPHER GOSCH
Contact address: 2459 CHARLOTTE ST
KANSAS CITY, MO 64040
Contact country: US
Contact telephone: (816) 732-4117
Contact email: Not reported
EPA Region: 07
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: Yes
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

ROD:
Full-text of USEPA Record of Decision(s) is available from EDR.

PRP:
PRP name: AMERICAN STEEL WORKS, INC.
CAMPBELL SOUP COMPANY
CAMPBELL SOUP COMPANY
CENTRAL ILLINOIS PUBLIC SERVICE COMPANY
CENTRAL LOUISIANA ELECTRIC COMPANY INC.
CENTRAL LOUISIANA ELECTRIC COMPANY INC.
CENTRAL LOUISIANA ELECTRIC COMPANY INC.
CITY OF COLORADO SPRINGS

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

CITY OF HOLDEN, MISSOURI
CITY OF HOLDEN, MISSOURI
COLORADO SPRINGS DEPARTMENT OF UTILITIES
COMMONWEALTH EDISON COMPANY
COMMONWEALTH EDISON COMPANY
COMMONWEALTH EDISON COMPANY
ENVIRONMENTAL TECHNOLOGY, INC.
GENERAL MOTORS CORPORATION
GENERAL MOTORS CORPORATION
ILLINOIS POWER COMPANY
ILLINOIS POWER COMPANY
ILLINOIS POWER COMPANY
INTERSTATE POWER COMPANY
INTERSTATE POWER COMPANY
INTERSTATE POWER COMPANY
IOWA PUBLIC SERVICE COMPANY
IOWA PUBLIC SERVICE COMPANY
IOWA PUBLIC SERVICE COMPANY
KANSAS POWER & LIGHT COMPANY
KANSAS POWER & LIGHT COMPANY
KANSAS POWER & LIGHT COMPANY
LEAR SIEGLER, INC.
LEAR SIEGLER, INC.
LOUISIANA POWER & LIGHT CO.
LOUISIANA POWER & LIGHT CO.
LOUISIANA POWER & LIGHT CO.
MARTHA C. ROSE CHEMICALS, INC
MIDWEST POWER
MISSOURI PUBLIC SERVICE COMPANY
MISSOURI PUBLIC SERVICE COMPANY
MISSOURI PUBLIC SERVICE COMPANY
NEW ENGLAND ELECTRIC SYSTEM, INC.
NEW ENGLAND ELECTRIC SYSTEM, INC.
NEW ENGLAND ELECTRIC SYSTEM, INC.
OKLAHOMA GAS & ELECTRIC COMPANY
OKLAHOMA GAS & ELECTRIC COMPANY
OKLAHOMA GAS & ELECTRIC COMPANY
OMAHA PUBLIC POWER DISTRICT
OMAHA PUBLIC POWER DISTRICT
ROSE CHEMICAL STEERING COMMITTEE
ROSE CHEMICAL STEERING COMMITTEE
SAVANAH ELECTRIC & POWER COMPANY
SOUTHWESTERN ELECTRIC POWER COMPANY
SOUTHWESTERN ELECTRIC POWER COMPANY
SOUTHWESTERN ELECTRIC POWER COMPANY
W.C. CAROLAN COMPANY, INC.
WALTER C. CAROLAN
WEST TEXAS UTILITIES COMPANY
WEST TEXAS UTILITIES COMPANY
WEST TEXAS UTILITIES COMPANY

NY MANIFEST:

Country:	USA
EPA ID:	MOD980633069
Facility Status:	Not reported
Location Address 1:	500 WEST MCKISSOCK AVENUE
Code:	BP

ROSE, MARTHA CHEMICAL CO (Continued) **1000199493**

Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	HOLDEN
Location State:	MO
Location Zip:	64040
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	MOD980633069
Mailing Name:	MARTHA C. ROSE INCORPORATED
Mailing Contact:	UNKNOWN
Mailing Address 1:	500 WEST MCKISSOCK AVENUE
Mailing Address 2:	Not reported
Mailing City:	HOLDEN
Mailing State:	MO
Mailing Zip:	64040
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	8167324117

A2 Target Property **PCB ELIMINATORS** **FINDS** **1007143342**
500 WEST MCKISSOCK STREET **ECHO** **N/A**
HOLDEN, MO 64040

Site 2 of 6 in cluster A

Actual: 841 ft.

FINDS:

Registry ID: 110015917686

Environmental Interest/Information System

The MO-DNR (Missouri Department of Natural Resources) program involves a Resource Assessment and Monitoring Program, biological criteria development, monitoring of targeted sites to determine compliance with the designated use of aquatic life protection in the standards, monitoring for 303(3) purposes, and the development of a stream classification framework.

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

PCB ELIMINATORS (Continued) **1007143342**

that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

ECHO:

Envid:	1007143342
Registry ID:	110015917686
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110015917686

A3 Target Property **MARTHA C. ROSE CHEMICALS** **FINDS** **1014768435**
500 MCKISSOCK ST **N/A**
HOLDEN, MO 64040

Site 3 of 6 in cluster A

Actual: 841 ft.

FINDS:

Registry ID: 110042721917

Environmental Interest/Information System
The MO-DNR (Missouri Department of Natural Resources) program involves a Resource Assessment and Monitoring Program, biological criteria development, monitoring of targeted sites to determine compliance with the designated use of aquatic life protection in the standards, monitoring for 303(3) purposes, and the development of a stream classification framework.

A4 Target Property **HOLDEN BUSINESS PARK** **MO SMARS** **S118557526**
500 W. MCKISSOCK ST. **N/A**
HOLDEN, MO 64093

Site 4 of 6 in cluster A

Actual: 841 ft.

SMARS:

SM Number:	12671
CERCLIS:	Not reported
Ownership:	VCP
Superfund Ownership:	False
Voluntary Cleanup Ownership:	False
Federal Facilities Ownership:	False
Permits Ownership:	False
NPL Date:	Not reported
Tank Site Identification #:	Not reported
Tank Remediation #:	Not reported
Registry:	False
Site Code:	Not reported
Other Site Code:	Not reported

A5 Target Property | **MARTHA C. ROSE CHEMICALS** | **MO SMARS** | **S112443342**
500 WEST MCKISSOCK | **N/A**
HOLDEN, MO 64040

Site 5 of 6 in cluster A

Actual: 841 ft.

SMARS:

SM Number:	10030
CERCLIS:	MOD980633069
Ownership:	Superfund
Superfund Ownership:	True
Voluntary Cleanup Ownership:	False
Federal Facilities Ownership:	False
Permits Ownership:	False
NPL Date:	Not reported
Tank Site Identification #:	Not reported
Tank Remediation #:	Not reported
Registry:	False
Site Code:	3265
Other Site Code:	078D

A6 Target Property | **ROSE, MARTHA CHEMICAL CO** | **ICIS** | **1018303787**
500 W MCKISSOCK | **N/A**
HOLDEN, MO 64040

Site 6 of 6 in cluster A

Actual: 841 ft.

ICIS:

Enforcement Action ID:	07-1992-0397
FRS ID:	110015917686
Action Name:	MARTHA C. ROSE CHEMICALS, INC., HOLDEN, MO
Facility Name:	ROSE, MARTHA CHEMICAL CO
Facility Address:	500 W MCKISSOCK HOLDEN, MO 64040
Enforcement Action Type:	CERCLA 106 AO For Resp Action/Imm Haz
Facility County:	JOHNSON
Program System Acronym:	ICIS
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	106
Facility SIC Code:	Not reported
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	38.71916
Longitude in Decimal Degrees:	-93.994396
Permit Type Desc:	Not reported
Program System Acronym:	22399
Facility NAICS Code:	Not reported
Tribal Land Code:	Not reported

Enforcement Action ID:	07-1986-0042
FRS ID:	110015917686
Action Name:	MARTHA C. ROSE CHEMICALS, INC.
Facility Name:	ROSE, MARTHA CHEMICAL CO
Facility Address:	500 W MCKISSOCK HOLDEN, MO 64040
Enforcement Action Type:	Civil Judicial Action
Facility County:	JOHNSON
Program System Acronym:	ICIS
Enforcement Action Forum Desc:	Judicial
EA Type Code:	CIV
Facility SIC Code:	Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1018303787**

Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	38.71916
Longitude in Decimal Degrees:	-93.994396
Permit Type Desc:	Not reported
Program System Acronym:	22399
Facility NAICS Code:	Not reported
Tribal Land Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

ROSE, MARTHA CHEMICAL CO (Continued) **1018303787**

Facility Name:	PCB ELIMINATORS
Address:	500 WEST MCKISSOCK STREET
Tribal Indicator:	N
Fed Facility:	No
NAIC Code:	Not reported
SIC Code:	Not reported

7
ESE
< 1/8
0.042 mi.
224 ft.

401 W MCKISSOCK ST
HOLDEN, MO 64040

EDR Hist Cleaner **1015055053**
N/A

Relative:
Lower

Actual:
837 ft.

EDR Historical Cleaners:

Name:	SUDS SHOPPE
Year:	2003
Address:	401 W MCKISSOCK ST

B8
SSE
< 1/8
0.073 mi.
384 ft.

CASEYS GENERAL STORE #1089
400 W 2ND ST
HOLDEN, MO 64040

Site 1 of 2 in cluster B

MO AST **1004741768**
RCRA NonGen / NLR **MOR000016626**
FINDS
ECHO

Relative:
Lower

Actual:
839 ft.

AST:

Facility ID:	2538
Facility Telephone Number:	816-732-3523
Products Count:	28
Cabinets Count:	4
Total number of meters:	20
AST Count:	0
UST Count:	3
Product Count:	87;89;91;2-D;
DOR Tax Number:	15714110
Prof Cat:	KCA;STA;
Latitude:	38.71831
Longitude:	-93.99356

RCRA NonGen / NLR:

Date form received by agency:	01/04/2001
Facility name:	CASEYS GENERAL STORE #1089
Facility address:	400 W 2ND ST HOLDEN, MO 64040
EPA ID:	MOR000016626
Mailing address:	PO BOX 3001 ANKENY, IA 500218045
Contact:	GLENN NORGART
Contact address:	PO BOX 3001 ANKENY, IA 500218045
Contact country:	US
Contact telephone:	(515) 965-6238
Contact email:	Not reported
EPA Region:	07
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

CASEYS GENERAL STORE #1089 (Continued) **1004741768**

Owner/Operator Summary:

Owner/operator name:	CASEYS GENERAL STORES INC
Owner/operator address:	PO BOX 3001 ANKENY, IA 50021
Owner/operator country:	Not reported
Owner/operator telephone:	(515) 965-6238
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:	10/08/1997
Site name:	CASEYS GENERAL STORE #1089
Classification:	Conditionally Exempt Small Quantity Generator
Violation Status:	No violations found

FINDS:

Registry ID: 110003986116

Environmental Interest/Information System

The MO-DNR (Missouri Department of Natural Resources) program involves a Resource Assessment and Monitoring Program, biological criteria development, monitoring of targeted sites to determine compliance with the designated use of aquatic life protection in the standards, monitoring for 303(3) purposes, and the development of a stream classification framework.

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.

CASEYS GENERAL STORE #1089 (Continued) **1004741768**

ECHO:

Envid:	1004741768
Registry ID:	110003986116
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110003986116

B9 SSE < 1/8 0.073 mi. 384 ft. | **CASEYS GENERAL STORE #1089** | **MO LUST** **U001159397**
400 W SECOND | **MO UST** **N/A**
HOLDEN, MO 64040

Site 2 of 2 in cluster B

Relative: Lower

Actual: 839 ft.

LUST:

Facility ID:	ST0010485
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	Not reported
Spill Number:	Not reported
Release Date:	08/30/1989
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	12/20/1989
Date Cleanup Finished:	07/20/1990
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**Not reported**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R001316
Rank:	Not reported
Emergeny Response Date:	08/30/1989
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	Not reported
RBCA NFA:	No
Project Manager:	L
Next Correspondence/Update With Fac:	Not reported
Date Added:	06/30/1995
Date Record Edited:	07/25/1997
Person Adding Or Editing Record:	N$PEARJ
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	Not reported

Facility ID:	ST0010485
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	Not reported
Spill Number:	Not reported
Release Date:	Not reported
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	01/30/2012
Date Cleanup Finished:	Not reported
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Number Of Remediation Monitoring Wells:	4
Active:	Yes
Date Of NFA Letter From DNR:	**Not reported**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R008705
Rank:	7
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	360
RBCA NFA:	Not reported
Project Manager:	JB
Next Correspondence/Update With Fac:	06/03/2016
Date Added:	06/15/2012
Date Record Edited:	03/17/2016
Person Adding Or Editing Record:	BUCKLER, JUSTIN
Facility Sent To State Archive:	Not reported
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	Not reported
General Comments:	CONTAMINATION > DTLS6/19/12 MAD- Approved work plan for groundwater investigation, and lead sampling (closure issue) from Sunbelt. The work plan proposes advancing seven soil borings for the collection of soil samples for lead analysis to satisfy outstanding UST closure requirements. It also proposes advancing five soil borings subsequently being converted into monitoring wells, for the purpose of delineating the soil and groundwater contamination at the site.10/30/12 MAD- Spoke with Chris Schaffer of Sunbelt. Requested 30 day extension in order to intall another MW to fully dilineate the site. Approved 30 day extension1/24/13 - JB - Reviewed SC report, report provided lead data missing from closure report, requested additional soil borings (only 1 currently) and monitoring wells to complete delineation. Requested WP within 60 days.6/10/13 - JB - Received phone call from Sunbelt regarding site. Asked if they could re-evaluate the domestic use pathway, told them that the Department would be willing to review any additional information that they provided.09/24/13 - JB - Reviewed DGLS response to document. Indicated that insufficient evidence was provided to show current and future domestic use of groundwater pathway as incomplete. Requested additional information regarding wells in the area, hydraulic conductivity of residuum, additional information supporting that the residuum and bedrock aquifers are separated by an aquitard. Requested response or work plan for additional site characterization in 60 days.10/30/13 vg app wp for 3 SBs & 1 GWMW. Report due in 90 days.04/16/14 - JB - Reviewed SC report. GW results were consistent with previous events however need laboratory detection limits to meet or be below the DTLs because of the complete domestic use pathway. Did not agree with delineation because no soil boring has been advanced in area of highest contamination (north end of tank pit) or east of the tank pit. These areas constitute data gaps for risk evaluation. Requested work plan within 60 days from the date of the letter.09/11/14 - JB - Reviewed GWM report. Site is using 2013 MRBCA. COCs in GW are consistent with

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

previous events however EDB and naphthalene detection limits are above MCLs. Also method 8260 was used for EDB when 8011 should have been. Requested that 8011 be used for EDB as required by MRBCA and recommended that 8270 be used for naphthalene. Did not agree that no risk exists from current or future domestic use pathway because of the detection limit issue above and sufficient GW events have not been conducted to calculate RC. Requested WP for additional GWM in 60 days.12/1/14 - JB - Reviewed WP/GWM report. Detection Limits for EDB and naphthalene above MCL/DTL requested that these be met, samples arrived at laboratory with melted ice and at 15C asked for justification for use of this data, lead exceeded DTL in MW2, WP proposed additional groundwater monitoring agreed that this was appropriate. Next report in 90 days.05/01/15 - JB - Reviewed GWM report. Naphthalene concentration in MW-2 exceeded DTLs, EDB detection limit above DTL although 8011 was used. Accepted use of data collected on 09/24/2014. Requested next report in 90 days.07/29/15 - JB - Reviewed GWM report. No COCs exceeded DTLs except for lead although RDL was above DTL for naphthalene. Agreed that additional GWM is needed and requested next report within 90 days.09/30/15 - JB - Reviewed GWM/WP report. COCs consistent with previous events. Advised that the RDL not the MDL should be used. Approved WP for 2 additional GWM events with 1st report due in 90 days.03/03/2016 - JB - Reviewed GWM/WP report. COCs consistent with previous events. Requested RG/PE seal. Next report in 90 days.

UST:

Facility ID:	ST0010485
Region:	KC
Easting:	413616.936
Northing:	4285977.56
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	CON_Fortin,Joel
Date GIS Data Collected:	04/14/2014
Lat/Long:	38.71823 / -93.99365
Lat/Long (dms):	Not reported

Tanks:

Owner:

Owner ID:	OW00263
Owner Name:	CASEYS MARKETING COMPANY
Owner Address:	PO BOX 3004
Owner City,St,Zip:	ANKENY, IA 50021 8045
Owner County Code:	167
Owner Phone:	9656238
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2015-10-20 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	1

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	06/01/1977
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Yes
Other Tank Internal Protection:	I Lining SW1856
Tank Internal Protection Date:	01/14/1995
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	11/04/2011
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	CD
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	06/05/2012
Person Adding/Editing Record:	DAVIS, MIKE
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	05/13/2011
Date Of Aprroval Letter:	2011-05-13 00:00:00
Firm Closing Tank:	Sunbelt
Date Closure Report Received:	2011-12-22 00:00:00
Registration End Date:	2013-09-30 00:00:00
LockOut Flag:	No
Comments:	1-30-12 MAD- DCR letter on outstanding closure issues.1) Samples not anaylzed for appropriate COCs2) No chain of custody with lab results3) Manifests for disposal of pit water4) Inadequate justification for incomplete groundwater pathway3-22-12 MAD-No response to outstanding closure issues, second letter4/2/12 MAD- Closure issues addressed 2 and 3. Also consultant accepts complete domestic use of groundwater.4/10/12 MAD- DCR 1) Samples not anaylzed for appropriate COCs, 2) work plan for GWI5/10/12 MAD- Phone call with Chris S. of Sunbelt. Sunblet has taken over duties as consultant for this site. They are preparing a workplan for the groundwater investigation and will take samples to check for lead as asked for in 4/10/12 DNR letter. Gave 15 day extension.

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	25777
Tank PK:	25777
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	10000
Substance:	Gasoline, Including Blends

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1977-06-01 00:00:00
Pipe System:	1
Pipe Material:	2
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Owner:

Owner ID:	OW00263
Owner Name:	CASEYS MARKETING COMPANY
Owner Address:	PO BOX 3004
Owner City,St,Zip:	ANKENY, IA 50021 8045
Owner County Code:	167
Owner Phone:	9656238
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2015-10-20 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	2
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	06/01/1977
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Yes
Other Tank Internal Protection:	I Lining SW1856
Tank Internal Protection Date:	01/14/1995
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	11/04/2011
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	CD
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	06/05/2012
Person Adding/Editing Record:	DAVIS, MIKE

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	05/13/2011
Date Of Aprroval Letter:	2011-05-13 00:00:00
Firm Closing Tank:	Sunbelt
Date Closure Report Received:	2011-12-22 00:00:00
Registration End Date:	2013-09-30 00:00:00
LockOut Flag:	No
Comments:	1-30-12 MAD- DCR letter on outstanding closure issues.1) Samples not anaylzed for appropriate COCs2) No chain of custody with lab results3) Manifests for disposal of pit water4) Inadequate justification for incomplete groundwater pathway3-22-12 MAD-No response to outstanding closure issues, second letter4/2/12 MAD-Closure issues addressed 2 and 3. Also consultant accepts complete domestic use of groundwater.4/10/12 MAD- DCR 1) Samples not anaylzed for appropriate COCs, 2) work plan for GWI5/10/12 MAD- Phone call with Chris S. of Sunbelt. Sunblet has taken over duties as consultant for this site. They are preparing a workplan for the groundwater investigation and will take samples to check for lead as asked for in 4/10/12 DNR letter. Gave 15 day extension.

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	25778
Tank PK:	25778
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	6000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1977-06-01 00:00:00
Pipe System:	1
Pipe Material:	2
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Owner:

Owner ID:	OW00263
Owner Name:	CASEYS MARKETING COMPANY
Owner Address:	PO BOX 3004
Owner City,St,Zip:	ANKENY, IA 50021 8045
Owner County Code:	167
Owner Phone:	9656238
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2015-10-20 00:00:00

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Name of Person Editing Record: BERVE, TRISHA

Tank ID: 3
Tank Double Wall: -1
Tank Type: Below Ground
Tank Status: Curently in use
Meet 98 Update Requirements: Yes
Date Tank Installed: 09/29/2011
Tank Material: Fiberglass
Code for Tank Material Manufacturer: 2
Code for Tank Installer: 16
Other Type Of Tank Material: Not reported
Tank Internal Protection: Not reported
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Not reported
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: Not reported
Date Tank Permanently Closed/ Removed: Not reported
Dt Tk Exp Brought InUse/Internal Tracking: 10/30/2011
Tank Fees Waived: Not reported
Expedite Closure On Tank?: Not reported
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 05/16/2011
Date Record Edited: 06/11/2014
Person Adding/Editing Record: SESSLER, D
Date Of NFA Letter: Not reported
Is Tank Used For Emergency Generator: Not reported
Date Closure Notice Received: Not reported
Date Of Aprroval Letter: Not reported
Firm Closing Tank: Not reported
Date Closure Report Received: Not reported
Registration End Date: 2018-09-30 00:00:00
LockOut Flag: No
Comments: Not reported

Tank Compartment:
Tanks Use: False
Compartment No: 1
Tank Compartment PK: 41674
Tank PK: 40961
Case Number: Not reported
Compartment Status: Curently in use
Compartment Temp Verified Dt: Not reported
Capacity: 20000
Substance: Gasoline, Including Blends
Substance Other: Not reported
Hazardous Substance: Not reported
Mixture: False
Date of Last Use: Not reported
Pipe Installation Date: 2011-10-06 00:00:00
Pipe System: 1
Pipe Material: 10

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	-1
Spill Protection:	True

Owner:

Owner ID:	OW00263
Owner Name:	CASEYS MARKETING COMPANY
Owner Address:	PO BOX 3004
Owner City,St,Zip:	ANKENY, IA 50021 8045
Owner County Code:	167
Owner Phone:	9656238
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2015-10-20 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	4	
Tank Double Wall:	-1	
Tank Type:	Below Ground	
Tank Status:	**Curently in use**	
Meet 98 Update Requirements:	Yes	
Date Tank Installed:	09/29/2011	
Tank Material:	Fiberglass	
Code for Tank Material Manufacturer:	2	
Code for Tank Installer:	16	
Other Type Of Tank Material:	Not reported	
Tank Internal Protection:	Not reported	
Other Tank Internal Protection:	Not reported	
Tank Internal Protection Date:	Not reported	
Tank External Protection:	Not reported	
Other Type Tank Extrn Protec:	Not reported	
Tank External Protec Date:	Not reported	
Date Tank Last Used:	Not reported	
Date Tank Permanently Closed/ Removed:	Not reported	
Dt Tk Exp Brought InUse/Internal Tracking:		10/30/2011
Tank Fees Waived:	Not reported	
Expedite Closure On Tank?:	Not reported	
Responsible Person Expediting Closure:	Not reported	
Temporary Status Verified Date:	Not reported	
Admin Fee 585:	Not reported	
Date Administratively Closed:	Not reported	
Date Record Added:	05/16/2011	
Date Record Edited:	05/20/2013	
Person Adding/Editing Record:	SESSLER, D	
Date Of NFA Letter:	Not reported	
Is Tank Used For Emergency Generator:	Not reported	
Date Closure Notice Received:	Not reported	
Date Of Aprroval Letter:	Not reported	
Firm Closing Tank:	Not reported	
Date Closure Report Received:	Not reported	
Registration End Date:	2018-09-30 00:00:00	

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	41675
Tank PK:	40962
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	12000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	2011-10-06 00:00:00
Pipe System:	1
Pipe Material:	10
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	-1
Spill Protection:	True

Tanks Use:	False
Compartment No:	2
Tank Compartment PK:	41677
Tank PK:	40962
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	8000
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	2011-10-06 00:00:00
Pipe System:	1
Pipe Material:	10
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	-1
Spill Protection:	True

Tank Aug 2011:

Facility Id:	ST0010485
Tank Id:	4
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0010485
Tank Id:	3
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0010485
Tank Id:	1
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	78
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0010485
Tank Id:	2
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	78

CASEYS GENERAL STORE #1089 (Continued) **U001159397**

No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

C10 **FASTOP CONVENIENCE** **MO LUST** **U003980535**
SE **303 W 2ND** **MO UST** **N/A**
1/8-1/4 **HOLDEN, MO 64040**
0.130 mi.
685 ft. **Site 1 of 3 in cluster C**

Relative:
Higher

Actual:
851 ft.

LUST:

Facility ID:	ST5700061
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	Not reported
Spill Number:	Not reported
Release Date:	04/19/1990
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	04/19/1990
Date Cleanup Finished:	11/07/1992
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**Not reported**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R001294
Rank:	Not reported
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	Not reported
RBCA NFA:	No
Project Manager:	L
Next Correspondence/Update With Fac:	Not reported
Date Added:	06/30/1995
Date Record Edited:	10/06/1999
Person Adding Or Editing Record:	NREQHW-GARRV
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	UNREGISTERED LEAKING UST W/PRODUCT, AFFECTING LOCAL GROUNDWATER

UST:

Facility ID:	ST5700061
Region:	KC
Easting:	413702.38
Northing:	4285926.70
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	VANCE, S
Date GIS Data Collected:	08/27/2013

FASTOP CONVENIENCE (Continued) **U003980535**

Lat/Long: 38.7180022 / -93.992249
Lat/Long (dms): Not reported

Tanks:

Owner:
Owner ID: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Owner County Code: Not reported
Owner Phone: Not reported
Mail Was Not Deliverable: Not reported
Is Owner Active?: Not reported
Date Registration Received: Not reported
Date Record Added: Not reported
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: Not reported
Tank Double Wall: Not reported
Tank Type: Not reported
Tank Status: Not reported
Meet 98 Update Requirements: Not reported
Date Tank Installed: Not reported
Tank Material: Not reported
Code for Tank Material Manufacturer: Not reported
Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported
Tank Internal Protection: Not reported
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Not reported
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: Not reported
Date Tank Permanently Closed/ Removed: Not reported
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: Not reported
Expedite Closure On Tank?: Not reported
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: Not reported
Date Record Edited: Not reported
Person Adding/Editing Record: Not reported
Date Of NFA Letter: Not reported
Is Tank Used For Emergency Generator: Not reported
Date Closure Notice Received: Not reported
Date Of Aprroval Letter: Not reported
Firm Closing Tank: Not reported
Date Closure Report Received: Not reported
Registration End Date: Not reported
LockOut Flag: Not reported
Comments: Not reported

FASTOP CONVENIENCE (Continued) **U003980535**

Tank Aug 2011:

Facility Id:	ST5700061
Tank Id:	Not reported
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	Not reported
No Buildings:	Not reported
Vapor Barrier:	Not reported
St Louis Mo:	Not reported
Special Well Area:	Not reported
Surface Cap:	Not reported
No Excavation:	Not reported

C11 **BREAK TIME # 3140** **MO LUST** **U003757051**
SE **200 S OLIVE** **MO UST** **N/A**
1/8-1/4 **HOLDEN, MO 64040** **MO AST**
0.139 mi.
733 ft. **Site 2 of 3 in cluster C**

Relative:
Higher

Actual:
852 ft.

LUST:

Facility ID:	ST0007777
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	Not reported
Spill Number:	0711090900CMS
Release Date:	11/09/2007
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	06/30/2008
Date Cleanup Finished:	05/22/2009
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**2009-05-27 00:00:00**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R008223
Rank:	Not reported
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	257
RBCA NFA:	Yes
Project Manager:	D
Next Correspondence/Update With Fac:	Not reported
Date Added:	09/11/2008
Date Record Edited:	08/05/2009
Person Adding Or Editing Record:	WASHBURN, M
Facility Sent To State Archive:	Not reported
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

General Comments: 09/11/08 - Reviewed wp for excavation and gw monitoring. Email correspondence with Dwight Leigh indicated that, as of this date, excavation has already been performed. FP from an historic release was discovered in the former tank pit. Excavation report is forthcoming. A gw mw is to be installed north of the former pit to ascertain if gw contamination remains. - MW03/05/09 - Reviewed Tier 1 risk assessment. Soil in the vicinity of the former tank pit has spots of heavy contamination, however RC is below non-res RBTLs for Soil Type 2. Report recommended two more qtrs gw monitoring. Agreed. - MW03/24/09 - Reviewed wp for gw monitoring. Proposal for two qtrs monitoring. Approved. - MW05/22/09 - Reviewed gw monitoring report. All COCs below DTLs. Issuing NFRA for Non-Res use, Soil Type 2. - MW5/27/09 Issued NFRA08/05/09 -Rec'd mw abandonment forms. - MW

UST:

Facility ID:	ST0007777
Region:	KC
Easting:	413736.669
Northing:	4285954.62
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	VANCE, S
Date GIS Data Collected:	08/26/2013
Lat/Long:	38.7179854 / -93.992209
Lat/Long (dms):	Not reported

Tanks:

Owner:

Owner ID:	OW04080
Owner Name:	PHELPS ENTERPRISES
Owner Address:	200 S OLIVE
Owner City,St,Zip:	HOLDEN, MO 64040
Owner County Code:	101
Owner Phone:	7676131
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2013-10-29 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	01/01/1981
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	11/18/1992
Date Tank Permanently Closed/ Removed:	11/18/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	05/15/2013
Person Adding/Editing Record:	SESSLER, D
Date Of NFA Letter:	11/18/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	10/04/1991
Date Of Aprroval Letter:	1992-11-18 00:00:00
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	1-6000 GAL GAS, 1-8000 GAL GAS

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19562
Tank PK:	19562
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	6000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1992-11-18 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	22
Pipe Material Other:	N.
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW04080
Owner Name:	PHELPS ENTERPRISES
Owner Address:	200 S OLIVE
Owner City,St,Zip:	HOLDEN, MO 64040
Owner County Code:	101
Owner Phone:	7676131
Mail Was Not Deliverable:	No

BREAK TIME # 3140 (Continued) **U003757051**

Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2013-10-29 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	2
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	01/01/1981
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	No
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	None
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	11/18/1992
Date Tank Permanently Closed/ Removed:	11/18/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	03/25/1996
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	11/18/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	10/04/1991
Date Of Aprroval Letter:	1992-11-18 00:00:00
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	1-6000 GAL GAS, 1-8000 GAL GAS

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19563
Tank PK:	19563
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	8000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False

BREAK TIME # 3140 (Continued) **U003757051**

Date of Last Use:	1992-11-18 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	22
Pipe Material Other:	N.
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	7
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Curently in use**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	10/01/1999
Tank Material:	Clad Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	Not reported
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	11/09/1999
Date Record Edited:	05/10/2016
Person Adding/Editing Record:	MCNALLY, M
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

Date Of Aprroval Letter:	Not reported
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	2019-09-30 00:00:00
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19564
Tank PK:	19564
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	12000
Substance:	R
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1996-08-01 00:00:00
Pipe System:	1
Pipe Material:	8
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	8
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Curently in use**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	10/01/1999
Tank Material:	Clad Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	Not reported
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	11/09/1999
Date Record Edited:	05/10/2016
Person Adding/Editing Record:	MCNALLY, M
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	Not reported
Date Of Aprroval Letter:	Not reported
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	2019-09-30 00:00:00
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	2
Tank Compartment PK:	41668
Tank PK:	19565
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	6000
Substance:	P
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1996-08-01 00:00:00
Pipe System:	1
Pipe Material:	8
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19565
Tank PK:	19565
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	6000

BREAK TIME # 3140 (Continued) **U003757051**

Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1996-08-01 00:00:00
Pipe System:	1
Pipe Material:	8
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	9
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Curently in use**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	10/01/1999
Tank Material:	Clad Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	Not reported
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	11/09/1999
Date Record Edited:	05/10/2016

BREAK TIME # 3140 (Continued) **U003757051**

Person Adding/Editing Record:	MCNALLY, M
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	Not reported
Date Of Aprroval Letter:	Not reported
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	2019-09-30 00:00:00
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19566
Tank PK:	19566
Case Number:	Not reported
Compartment Status:	Curently in use
Compartment Temp Verified Dt:	Not reported
Capacity:	6000
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	1996-08-01 00:00:00
Pipe System:	1
Pipe Material:	8
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Tank Aug 2011:

Facility Id:	ST0007777
Tank Id:	1
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007777
Tank Id:	2
Site Usage:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007777
Tank Id:	7
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007777
Tank Id:	8
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007777
Tank Id:	9
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported

BREAK TIME # 3140 (Continued) **U003757051**

Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

AST:

Facility ID:	2545
Facility Telephone Number:	816-732-4972
Products Count:	39
Cabinets Count:	7
Total number of meters:	33
AST Count:	1
UST Count:	4
Product Count:	87;89;91;2-D;2DOR;
DOR Tax Number:	11878452
Prof Cat:	KCA;STA;
Latitude:	38.43035
Longitude:	-93.59328

C12 **PHELPS ENTERPRISES** **RCRA NonGen / NLR** **1007108526**
SE **200 S OLIVE** **MOP000033670**
1/8-1/4 **HOLDEN, MO 64040**
0.139 mi.
733 ft. **Site 3 of 3 in cluster C**

Relative:
Higher

Actual:
852 ft.

RCRA NonGen / NLR:

Date form received by agency:	08/10/2001
Facility name:	PHELPS ENTERPRISES
Facility address:	200 S OLIVE HOLDEN, MO 64040
EPA ID:	MOP000033670
Mailing address:	S OLIVE HOLDEN, MO 64040
Contact:	ADRIAN PHELPS
Contact address:	200 S OLIVE HOLDEN, MO 64040
Contact country:	US
Contact telephone:	(816) 732-4972
Contact email:	Not reported
EPA Region:	07
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ADRIAN PHELPS
Owner/operator address:	481 SW 131ST ST HOLDEN, MO 64040
Owner/operator country:	Not reported
Owner/operator telephone:	(816) 732-4972
Legal status:	Private

PHELPS ENTERPRISES (Continued) **1007108526**

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: 07/26/1999
Site name: PHELPS ENTERPRISES
Classification: Not a generator, verified

Violation Status: No violations found

13
NE
1/8-1/4
0.152 mi.
804 ft.

BULK FUEL PLANT **MO LAST** **S108272559**
301 W MADISON **N/A**
HOLDEN, MO 64040

Relative:
Lower

Actual:
840 ft.

LAST:
Facility ID: ST3007620
Lat/Long (dms): Not reported
Lat/Long: Not reported
Region: KC
Remediation ID: R007893
Expedited: No
Expedited Date: Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009: No
Reopened Date: Not reported
Number Of Remediation Monitoring Wells: 0
Active: No
Rank: 24
Spill Number: Not reported
Release Date: Not reported
Emergeny Reponse Date: Not reported
Emergency Cleanup Start: Not reported
Release Type: A
Date Cleanup Started: 03/08/2005
Date Cleanup Finished: 11/02/2007
Referred To DGLS for Investigation: Not reported
Contractor Performing Clean Up: 271
RBCA NFA: Yes
Date Of NFA Letter From DNR: 2007-12-11 00:00:00

BULK FUEL PLANT (Continued) **S108272559**

Project Manager:	W
Next Correspondence/Update With Fac:	Not reported
Date Added:	03/08/2005
Date Record Edited:	01/16/2008
Person Adding Or Editing Record:	KUTTENKULER, J
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
Date Record Meets Archive Criteria:	05/10/2011
General Comments:	03/16/05 - Contamination found during site investigation. WP for site characterization approved. - LL2/22/06:HM:Revd T-1 report of 10/15/05. Reqestd a response to 4 items.7/3/06:HM:Revd response of 3/23/06. Reqestd response to 3 items.8/30/06:HM:revd GW report of 7/17/06. Reqestd response to 4 items.9/25/06 MA rev a letter requesting cost approval to perform one round of groundwater sampling event. Requested the submittal of a WP for departmental approval prior to performing the monitoring event.3/6/07 JK--reviewed response letter and work plan. They will be sampling seven spots in and around former AST containment to collect data for hypothetical building, no need for analyzing for DRO, PAH or lead, requested info on private irrigation wells or dermal contact pathway complete, submit revised RA.11/02/07 JK--reviewed soil sampling and groundwater monitoring reports. Soil levels below RBTLs for on-site resident, GW below RBTLs, reviewd RA and response letters, domestic use and dermal pathways for GW not complete, drafted NFRA.1/16/08 JK--soil type is Type 3 ClaySite closed under Tier 1 RAResidential Future land useNo AUL usedNo off-site impactGroundwater flow is generally to the Northwest

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D14 **HOLDEN MANUFACTURING** **RCRA NonGen / NLR** **1007107437**
ESE **216 W 2ND ST** **MOP000008862**
1/8-1/4 **HOLDEN, MO 64040**
0.160 mi.
844 ft. **Site 1 of 3 in cluster D**

Relative:
Higher

Actual:
853 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/02/1997
Facility name:	HOLDEN MANUFACTURING
Facility address:	216 W 2ND ST HOLDEN, MO 64040
EPA ID:	MOP000008862
Mailing address:	CINTAS BLVD MASON, OH 45040
Contact:	BILL DULABAN
Contact address:	6800 CINTAS BLVD MASON, OH 45040
Contact country:	US
Contact telephone:	NA
Contact email:	Not reported
EPA Region:	07
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	UNITOG CO
Owner/operator address:	101 W 11TH ST KANSAS CITY, MO 64105

HOLDEN MANUFACTURING (Continued) **1007107437**

Owner/operator country: Not reported
Owner/operator telephone: (816) 474-7000
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

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

Violation Status: No violations found

D15 **BREAK TIME CONVENIENCE STORE #3040** **MO LUST** **U003164323**
ESE **215 W 2ND ST** **MO UST** **N/A**
1/8-1/4 **HOLDEN, MO 64040**
0.163 mi.
862 ft. **Site 2 of 3 in cluster D**

Relative:
Higher

Actual:
852 ft.

LUST:
Facility ID: ST0000799
Region: KC - Kansas City Regional Office
Lat/Long (dms): 38 43 4 / 93 59 32
Spill Number: Not reported
Release Date: Not reported
Release Type: UNDERGROUND STORAGE TANK
Date Cleanup Started: 04/26/2004
Date Cleanup Finished: Not reported
Expedited: No
Expedited Date: Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009No
Reopened Date: Not reported
Number Of Remediation Monitoring Wells: 4
Active: Yes
Date Of NFA Letter From DNR: Not reported
Date Record Meets Archive Criteria: Not reported

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Remediation ID:	R007762
Rank:	32
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	271
RBCA NFA:	No
Project Manager:	W
Next Correspondence/Update With Fac:	09/03/2016
Date Added:	04/26/2004
Date Record Edited:	06/03/2016
Person Adding Or Editing Record:	KUTTENKULER, J
Facility Sent To State Archive:	No
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	4/26/04 MAS: Rev'd PHIIESA. Soil contamination aboe DTL's. Requested further investigation.6/21/04 MAS: Approved WP for add't SC and completion of TIER 1 assessment.04/19/2005 - Comments on SC: 1) show proof that off-property access is not allowed. 2) explain DRO in field blank, 3) get DRO, ORO, PAH data for PH9-10, 4) Need PH-4 data. - LL06/21/05 - Received groundwater monitoring report. It appears that RW1 is the only area where the contamination remains, but groundwater monitoring needs to continue for at least two more quarters. ECR indicated that the FP was a small pocket that was removed when RW1 was installed. Unless MW4 indicates contamination in the future, then this is possibly true. Requested responses to 04/19/05 letter items 2-4. - LL8/15/05 kk rev response letter dated June 9, 2005. Sent letter back indicating that they are to provide addressed for adjacent property owner and MoDOT and department will write an access letter to parties. Also need to respond to "field blank" question and to how they determined not to submit samples for analysis to laboratory. Requested responses in 30 days.5/12/06 dlw rev T1/T2 report (12/6/05 recvd 1/24/06). Requested information has not been submitted. Unclear if contamination extends to off site properties (charactereized?). RA also has several fundamental deficiencies. Letter requested response to the Sept 2, 2005 letter and a revised T1/T2 report.11/3/08 JK--rev gwm report from MHS, new contractor for site. Only RW-1 bove DTLs, need nexrt GWM report and revised RA in 90 days. Drafted letter and sent to LL for review.9/21/11 JO - reviewed file, drafted status request letter on GWM and revised RA.3/22/2013 TB - Phoned Jack Gilcrest, property owner of adj downgradient property to discuss contam found at property line. Discussed needing access to his property for add'l delineation. He seems agreeable to granting access for sampling. Letter to MFA was written requesting status update.4/26/13 TB Sent letter to MFA req status update.7/8/13 TB no response rec'v. Issued LOW for response in 30 days.8/9/13 TB Tracy Barth called. MFA Oil has purchased a site across the street; therefore, they will be submitting a closure notice for this site. Tracy indicated Paul Sheetz, IPES is putting together the documentation and will submit soon. Will not issue a NOVat this time. Will request status update in 30 days if no documentation

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

received.8/12/13 MAD- Received closure notice1/28/14 TB Tracy Barth called. Indicated closure will not occuring at site. Planning to remove building and use site as unmanned petrocard station. I requested he submit a work plan prior to work commencing as DNR needs to ensure sampling is completed to address requirements of historic release. Mr. Barth indicated a work plan was submitted over a year ago.1/29/14 TB No copy of work plan in files. Sent email request for submission of work plan.2/27/14 TB No work plan yet received. PSTIF database indicates work has commenced at site. Sent another email request to Tracy for submission of work plan.4/18/14 JK--rev wp for GWM at site; req closure report after completion; addl MW may need to be installed after closure; req report in 90 days.10/24/14 JK--rev GWM report; The report summarized groundwater monitoring activities that took place eat the site during August 2014. The report also stated that closure of the tanks system at the site and demolition of the store occurred during February and April 2014. RW-1 was the only well that contained contaminant concentrations above the default target levels. The report contained a plume stability analysis for RW-1. The report recommended that a revise risk assessment be submitted for the site.Based on the review of the report, The Department offers the following comments and suggestions:1.Although the plume stability analysis did appear to show a decreasing trend, the sampling does not follow Section 5.9.3 of the guidance. The well has only been sampled four times over the last ten years and only one in the last six years. Groundwater monitoring for plume stability should be performed quarterly over a period of one to three years. Additional groundwater monitoring appears necessary.2.The Department agrees with the submittal of a revised risk assessment taking into account the closure sampling for the site and current groundwater and soil sampling data. Please submit a work plan for additional groundwater monitoring along with the revised risk assessment report within 90 days from the date of this letter.4/14/15 JK--rev wp; The work plan proposes advancing two soil borings to the north and east of the site, collect geotechnical data, and collect groundwater samples from existing monitoring wells. The scope of work is approved with the following comments. 1.Since you are unable to place soil borings on the north off-site property between the source and the building, data from the closest borings between the building and the source should be incorporated into the risk assessment. Please notify the Department prior to conducting activities so that we may be present, if available. Please submit a report of completed activities along with the next groundwater monitoring report within 90 days from the date of this letter.6/23/15 JK--rev WP; The work plan proposes advancing four additional soil borings at the site. Three will be placed along the north of the property and one will be advanced to the northeast, within ten feet of the adjacent building. Groundwater monitoring will take place at the four monitoring wells. The scope of work is approved with the following comments. 1.Since you are unable to

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

place soil borings on the north off-site property between the source and the building, data from the closest borings between the building and the source should be incorporated into the risk assessment.2.Additional delineation for soil and groundwater may be necessary following the completion of activities and the submittal of a revised risk assessment.Please notify the Department prior to conducting activities so that we may be present, if available. Please submit a report of completed activities along with the next groundwater monitoring report within 90 days from the date of this letter.11/24/15 JK--rev site and drafted status letter.12/3/15 Jk--rec phone call from Mark Schultz; work has been done and report needs to be finished and submitted.3/28/16 JK--rev file and drafted status letter.6/3/16 JK--rev SC report and WP; The report summarized activities that took place at the site during September and October 2015. Four soil borings were advanced along the northern portion of the property to attempt to delineate soil contamination in this direction. Soil contamination was detected above the delineation criteria. Groundwater sampling was also conducted.The work plan proposes advancing up to four soil borings on the north off-site property in order to delineate in this direction and obtain geotechnical data. A groundwater sampling event will also be performed. The scope of work is approved with the following addition:1.It appears that additional soil delineation is also necessary to the northwest in the area of the off-site residence in this direction. Please include additional boring(s) in this area.Please submit a report of completed activities within 90 days from the date of this letter.

Facility ID:	ST0000799
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	38 43 4 / 93 59 32
Spill Number:	Not reported
Release Date:	08/15/1991
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	11/03/1990
Date Cleanup Finished:	03/26/1992
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**Not reported**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R002628
Rank:	Not reported
Emergeny Response Date:	08/14/1991
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	Not reported
RBCA NFA:	No
Project Manager:	L
Next Correspondence/Update With Fac:	Not reported

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Date Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding Or Editing Record:	Not reported
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	Not reported

UST:

Facility ID:	ST0000799
Region:	KC
Easting:	413753.719
Northing:	4285922.81
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	CON_Fortin,Joel
Date GIS Data Collected:	04/14/2014
Lat/Long:	38.71775 / -93.99207
Lat/Long (dms):	38 43 4 / 93 59 32

Tanks:

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	01/01/1987
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Sacrificial
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	04/13/2014
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	CD

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	08/14/2014
Person Adding/Editing Record:	DAVIS, MIKE
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	08/12/2013
Date Of Aprroval Letter:	2013-08-14 00:00:00
Firm Closing Tank:	MHS
Date Closure Report Received:	2014-07-14 00:00:00
Registration End Date:	2014-09-30 00:00:00
LockOut Flag:	No
Comments:	2/25/14 MAD- received email from TB who spoke with MFA. Closure is no longer happening at this site\\8/14/14 MAD- Closure good continue R

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1979
Tank PK:	1979
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	8000
Substance:	R
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	Not reported
Pipe System:	1
Pipe Material:	2
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID: 2

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	01/01/1991
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Sacrificial
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	04/13/2014
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	CD
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	08/14/2014
Person Adding/Editing Record:	DAVIS, MIKE
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	08/12/2013
Date Of Aprroval Letter:	2013-08-14 00:00:00
Firm Closing Tank:	MHS
Date Closure Report Received:	2014-07-14 00:00:00
Registration End Date:	2014-09-30 00:00:00
LockOut Flag:	No
Comments:	8/14/14 MAD- Closure good continue R

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1980
Tank PK:	1980
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	8000
Substance:	P
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	Not reported
Pipe System:	1
Pipe Material:	2
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Spill Protection: True

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	3
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	No
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Other
Other Type Tank Extrn Protec:	C.
Tank External Protec Date:	Not reported
Date Tank Last Used:	03/27/1992
Date Tank Permanently Closed/ Removed:	03/27/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	08/14/2013
Person Adding/Editing Record:	DAVIS, MIKE
Date Of NFA Letter:	03/27/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	03/26/1992
Date Of Aprroval Letter:	1992-03-27 00:00:00
Firm Closing Tank:	MFA OIL COMPANY
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1981
Tank PK:	1981
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1992-03-27 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	1
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	4
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	03/27/1992
Date Tank Permanently Closed/ Removed:	03/27/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	03/27/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	03/26/1992
Date Of Aprroval Letter:	1992-03-27 00:00:00
Firm Closing Tank:	MFA OIL COMPANY
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1982
Tank PK:	1982
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Not reported
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1992-03-27 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	Not reported
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Tank ID:	5
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	Not reported
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	Not reported
Date Of Aprroval Letter:	Not reported
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1983
Tank PK:	1983
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Not reported
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	Not reported
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW10215
Owner Name:	MFA PETROLEUM COMPANY
Owner Address:	PO BOX 519
Owner City,St,Zip:	COLUMBIA, MO 65205
Owner County Code:	19
Owner Phone:	4420171
Mail Was Not Deliverable:	No
Is Owner Active?:	Yes
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	2014-12-18 00:00:00
Name of Person Editing Record:	BERVE, TRISHA

Tank ID:	6
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Yes
Date Tank Installed:	01/01/1985
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Sacrificial
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	04/13/2014
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	CD
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	02/03/1999
Date Record Edited:	08/14/2014
Person Adding/Editing Record:	DAVIS, MIKE
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	08/12/2013
Date Of Aprroval Letter:	2013-08-14 00:00:00
Firm Closing Tank:	MHS
Date Closure Report Received:	2014-07-14 00:00:00
Registration End Date:	2014-09-30 00:00:00
LockOut Flag:	No
Comments:	8/14/14 MAD- Closure good continue R

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	1984
Tank PK:	1984
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	Not reported
Pipe Installation Date:	Not reported
Pipe System:	1
Pipe Material:	2
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	True

Tank Aug 2011:

Facility Id:	ST0000799
Tank Id:	4
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0000799
Tank Id:	6
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0000799
Tank Id:	3
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0000799
Tank Id:	1
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0000799
Tank Id:	2
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No

BREAK TIME CONVENIENCE STORE #3040 (Continued) **U003164323**

No Excavation:	No
Facility Id:	ST0000799
Tank Id:	5
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

D16 **BREAK TIME #3040** **RCRA NonGen / NLR** **1010322816**
ESE **215 W 2ND ST** **MOR000524280**
1/8-1/4 **HOLDEN, MO 64040**
0.163 mi.
862 ft. **Site 3 of 3 in cluster D**

Relative:
Higher

Actual:
852 ft.

RCRA NonGen / NLR:

Date form received by agency:	10/08/2014
Facility name:	BREAK TIME #3040
Facility address:	215 W 2ND ST HOLDEN, MO 64040-1324
EPA ID:	MOR000524280
Mailing address:	PO BOX 519 COLUMBIA, MO 65205-0519
Contact:	DANIEL CREEK
Contact address:	PO BOX 519 COLUMBIA, MO 65205-0519
Contact country:	US
Contact telephone:	(573) 219-5785
Contact email:	DCREEK@MFAOIL.COM
EPA Region:	07
Land type:	Private
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	MFA OIL COMPANY
Owner/operator address:	PO BOX 519 COLUMBIA, MO 65205
Owner/operator country:	US
Owner/operator telephone:	(573) 219-5785
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	10/17/2006
Owner/Op end date:	Not reported
Owner/operator name:	MFA OIL COMPANY

BREAK TIME #3040 (Continued) **1010322816**

Owner/operator address: PO BOX 519
COLUMBIA, MO 65205
Owner/operator country: US
Owner/operator telephone: (573) 219-5785
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 10/17/2006
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: 06/11/2014
Site name: BREAK TIME #3040
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 06/09/2014
Site name: BREAK TIME #3040
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 01/22/2007
Site name: BREAK TIME #3040
Classification: Conditionally Exempt Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 10/17/2006
Site name: BREAK TIME #3040
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

BREAK TIME #3040 (Continued) **1010322816**

Evaluation Action Summary:

Evaluation date:	03/24/2008
Evaluation:	COMPLIANCE ASSISTANCE VISIT
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State

E17 NNE 1/8-1/4 0.169 mi. 890 ft. **BENSON AUTO SERVICES** **RCRA NonGen / NLR** **1008373900**
203 N LEXINGTON **MOG000004496**
HOLDEN, MO 64040

Site 1 of 3 in cluster E

Relative: Lower

Actual: 837 ft.

RCRA NonGen / NLR:

Date form received by agency:	11/13/1985
Facility name:	BENSON AUTO SERVICES
Facility address:	203 N LEXINGTON HOLDEN, MO 64040
EPA ID:	MOG000004496
Mailing address:	N LEXINGTON HOLDEN, MO 64040
Contact:	UNKNOWN UNKNOWN
Contact address:	203 N LEXINGTON HOLDEN, MO 64040
Contact country:	US
Contact telephone:	(573) 732-3558
Contact email:	Not reported
EPA Region:	07
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	UNKNOWN
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:	11/13/1985
Owner/Op end date:	Not reported

Owner/operator name:	UNKNOWN
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:	11/13/1985
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

BENSON AUTO SERVICES (Continued) **1008373900**

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

E18
NNE
1/8-1/4
0.169 mi.
890 ft.

J.R.'S USED TRUCKS **US BROWNFIELDS** **1016357644**
203 NORTH LEXINGTON STREET **FINDS** **N/A**
HOLDEN, MO 64040

Site 2 of 3 in cluster E

Relative:
Lower

Actual:
837 ft.

US BROWNFIELDS:

Recipient name:	Missouri Department of Natural Resources
Grant type:	Assessment
Property name:	J.R.'S USED TRUCKS
Property #:	17-10-11-02-006-0004.00
Parcel size:	1.84
Property Description:	"This site is a former gas station and truck repair business, is approximately 1.84 acres in size and is currently vacant. Site buildings, including a car wash, and aboveground storage tanks and hydraulic lifts are still present on the property. The Johnson County Economic Development Corporation has applied on behalf of the owner, F & C Bank who acquired the property through foreclosure to have the property assessed for potential contamination. "
Latitude:	38.721448
Longitude:	-93.993026
HCM label:	Not reported
Map scale:	1:24,000
Point of reference:	Center of a Facility or Station
Datum:	North American Datum of 1983
ACRES property ID:	123415
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	1952
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:	Petroleum
Accomplishment type:	Phase I Environmental Assessment
Accomplishment count:	1
Cooperative agreement #:	98788901
Ownership entity:	Private
Current owner:	F & C Bank

J.R.'S USED TRUCKS (Continued) **1016357644**

Did owner change:	N
Cleanup required:	Unknown
Video available:	No
Photo available:	Yes
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:	No
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:	Y
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:	Y
Soil cleaned up:	Not reported
Surface water cleaned:	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:	1.84
Past use industrial acreage:	Not reported
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

J.R.'S USED TRUCKS (Continued) **1016357644**

Superfund Fed. landowner flag:	N
Arsenic cleaned up:	Not reported
Cadmium cleaned up:	Not reported
Chromium cleaned up:	Not reported
Copper cleaned up:	Not reported
Iron cleaned up:	Not reported
mercury cleaned up:	Not reported
nickel cleaned up:	Not reported
No clean up:	Not reported
Pesticides cleaned up:	Not reported
Selenium cleaned up:	Not reported
SVOCs cleaned up:	Not reported
Unknown clean up:	Not reported
Arsenic contaminant found:	Not reported
Cadmium contaminant found:	Not reported
Chromium contaminant found:	Not reported
Copper contaminant found:	Not reported
Iron contaminant found:	Not reported
Mercury contaminant found:	Not reported
Nickel contaminant found:	Not reported
No contaminant found:	Not reported
Pesticides contaminant found:	Not reported
Selenium contaminant found:	Not reported
SVOCs contaminant found:	Not reported
Unknown contaminant found:	Not reported
Future Use: Multistory	Not reported
Media affected Bluiding Material:	Not reported
Media affected indoor air:	Not reported
Building material media cleaned up:	Not reported
Indoor air media cleaned up:	Not reported
Unknown media cleaned up:	Not reported
Past Use: Multistory	Not reported
Highlights:	Not reported
IC Data Address:	Not reported
Redev Completition Date:	Not reported
# Below Poverty:	238
% Below Poverty:	3.3%
# Low Income:	394
% Low Income:	2.0%
Meidan Income:	5934
# Unemployed:	71
% Unemployed:	11.2%
# Vacant Housing:	29
% Vacant Housing:	27.4%

FINDS:

Registry ID: 110043242363

Environmental Interest/Information System
US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an federal online database for Brownfields Grantees to electronically submit data directly to EPA.

E19 NNE 1/8-1/4 0.169 mi. 890 ft. | **J.R.'S USED TRUCKS**
203 NORTH LEXINGTON STREET
HOLDEN, MO 64040 | **MO SMARS** | **S112443040**
N/A

Site 3 of 3 in cluster E

Relative: Lower

Actual: 837 ft.

SMARS:

SM Number:	12045
CERCLIS:	Not reported
Ownership:	VCP
Superfund Ownership:	False
Voluntary Cleanup Ownership:	True
Federal Facilities Ownership:	False
Permits Ownership:	False
NPL Date:	Not reported
Tank Site Identification #:	Not reported
Tank Remediation #:	Not reported
Registry:	False
Site Code:	Not reported
Other Site Code:	Not reported

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20 East 1/8-1/4 0.221 mi. 1168 ft. | **MIDWEST OIL COMPANY**
103 W MADISON
HOLDEN, MO 64040 | **MO UST** | **U003979939**
N/A

Relative: Higher

Actual: 849 ft.

UST:

Facility ID:	ST0018944
Region:	KC
Easting:	413889.840
Northing:	4286136.65
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	VANCE, S
Date GIS Data Collected:	08/27/2013
Lat/Long:	38.7319 / -93.9736
Lat/Long (dms):	Not reported

Tanks:

Owner:

Owner ID:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Owner County Code:	Not reported
Owner Phone:	Not reported
Mail Was Not Deliverable:	Not reported
Is Owner Active?:	Not reported
Date Registration Received:	Not reported
Date Record Added:	Not reported
Date Record Edited:	Not reported
Name of Person Editing Record:	Not reported

Tank ID:	Not reported
Tank Double Wall:	Not reported
Tank Type:	Not reported
Tank Status:	**Not reported**
Meet 98 Update Requirements:	Not reported
Date Tank Installed:	Not reported

MIDWEST OIL COMPANY (Continued) **U003979939**

Tank Material:	Not reported
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	Not reported
Date Tank Permanently Closed/ Removed:	Not reported
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Not reported
Expedite Closure On Tank?:	Not reported
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	Not reported
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	Not reported
Is Tank Used For Emergency Generator:	Not reported
Date Closure Notice Received:	Not reported
Date Of Aprroval Letter:	Not reported
Firm Closing Tank:	Not reported
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	Not reported
Comments:	Not reported

Tank Aug 2011:

Facility Id:	ST0018944
Tank Id:	Not reported
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	Not reported
No Buildings:	Not reported
Vapor Barrier:	Not reported
St Louis Mo:	Not reported
Special Well Area:	Not reported
Surface Cap:	Not reported
No Excavation:	Not reported

21 ESE 1/4-1/2 0.364 mi. 1924 ft. | **CHANEY SERVICE (SINCLAIR)**
205 S PINE
HOLDEN, MO 64040 | **MO LUST** | **U003757049**
MO UST | **N/A**

Relative: Higher

Actual: 854 ft.

LUST:

Facility ID:	ST0007745
Region:	KC - Kansas City Regional Office
Lat/Long (dms):	Not reported
Spill Number:	Not reported
Release Date:	08/21/1991
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	08/21/1991
Date Cleanup Finished:	Not reported
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**Not reported**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R002610
Rank:	Not reported
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	Not reported
RBCA NFA:	No
Project Manager:	L
Next Correspondence/Update With Fac:	Not reported
Date Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding Or Editing Record:	Not reported
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	Not reported

UST:

Facility ID:	ST0007745
Region:	KC
Easting:	414089.31
Northing:	4285848.16
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	VANCE, S
Date GIS Data Collected:	08/27/2013
Lat/Long:	38.7177866 / -93.988464
Lat/Long (dms):	Not reported

Tanks:

Owner:

Owner ID:	OW04039
Owner Name:	CHANEY SERVICE
Owner Address:	205 S PINE
Owner City,St,Zip:	HOLDEN, MO 64040
Owner County Code:	101
Owner Phone:	7326866

CHANEY SERVICE (SINCLAIR) (Continued) **U003757049**

Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$ATKIG

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	None
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	01/29/1992
Date Tank Permanently Closed/ Removed:	01/29/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	01/29/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	09/20/1991
Date Of Aprroval Letter:	1992-01-29 00:00:00
Firm Closing Tank:	AMERICAN WASTE MANAGEMENT
Date Closure Report Received:	1991-08-22 00:00:00
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19494
Tank PK:	19494
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported

CHANEY SERVICE (SINCLAIR) (Continued) **U003757049**

Mixture:	False
Date of Last Use:	1992-01-29 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	1
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW04039
Owner Name:	CHANEY SERVICE
Owner Address:	205 S PINE
Owner City,St,Zip:	HOLDEN, MO 64040
Owner County Code:	101
Owner Phone:	7326866
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$ATKIG

Tank ID:	2
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	None
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	01/29/1992
Date Tank Permanently Closed/ Removed:	01/29/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	01/29/1992
Is Tank Used For Emergency Generator:	No

CHANEY SERVICE (SINCLAIR) (Continued) **U003757049**

Date Closure Notice Received:	09/20/1991
Date Of Aprroval Letter:	1992-01-29 00:00:00
Firm Closing Tank:	AMERICAN WASTE MANAGEMENT
Date Closure Report Received:	1991-08-22 00:00:00
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19495
Tank PK:	19495
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1992-01-29 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	1
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW04039
Owner Name:	CHANEY SERVICE
Owner Address:	205 S PINE
Owner City,St,Zip:	HOLDEN, MO 64040
Owner County Code:	101
Owner Phone:	7326866
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$ATKIG

Tank ID:	3
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	No
Date Tank Installed:	Not reported
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported

CHANEY SERVICE (SINCLAIR) (Continued) **U003757049**

Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	None
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	01/29/1992
Date Tank Permanently Closed/ Removed:	01/29/1992
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	01/29/1992
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	09/20/1991
Date Of Aprroval Letter:	1992-01-29 00:00:00
Firm Closing Tank:	AMERICAN WASTE MANAGEMENT
Date Closure Report Received:	1991-08-22 00:00:00
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	19496
Tank PK:	19496
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	4000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1992-01-29 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	1
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Tank Aug 2011:

Facility Id:	ST0007745
Tank Id:	1
Site Usage:	Not reported
Risk Type:	Not reported

CHANEY SERVICE (SINCLAIR) (Continued) **U003757049**

Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007745
Tank Id:	2
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0007745
Tank Id:	3
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

22 North 1/4-1/2 0.465 mi. 2457 ft. | **SOUTHERN STAR CENTRAL GAS PIPELINE INC.-NORTHERN AREA SITE** | **MO VCP** | **S108987750**
MO SMARS | **N/A**

HOLDEN, MO 64037

Relative: Lower

Actual: 836 ft.

VCP:

Northing:	4286818
Easting:	413680
Facility Status:	Cert. of Completion Issued
Activity Use:	Not reported
Manager:	Jennifer Surber
Cert. of completion issued:	11/13/2009
Application Received:	7/16/2007
State Funded:	Not reported
Federal Funded:	Not reported
Acreage:	.002
Operable Unit:	Holden MO T.B.
Site Description:	The Southern Star Central Gas Pipeline Inc.-Northern Area Site consists of several natural gas pipeline meter or compressor stations. Until the 1980s the meters and compressors used mercury to monitor gas flow. Mercury may have been released into soil during maintenance operations at each station.
Contaminant:	Mercury

SMARS:

SM Number:	11795
CERCLIS:	Not reported
Ownership:	VCP
Superfund Ownership:	False
Voluntary Cleanup Ownership:	True
Federal Facilities Ownership:	False
Permits Ownership:	False
NPL Date:	Not reported
Tank Site Identification #:	Not reported
Tank Remediation #:	Not reported
Registry:	False
Site Code:	Not reported
Other Site Code:	Not reported

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HOLDEN	1003876857	HOLDEN POND TRANSFORMERS	N OF PINE ST E ON ELIZ 5 MI	64040	SEMS-ARCHIVE

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: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
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: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
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: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 10/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 01/16/2017
	Data Release Frequency: Quarterly

Federal CERCLIS list

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 EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/14/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/04/2016	Telephone: 703-603-8704
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 10/04/2016
Number of Days to Update: 17	Next Scheduled EDR Contact: 01/16/2017
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list 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). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 10/20/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 01/30/2017
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS 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 the 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. The 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 potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/20/2016
Next Scheduled EDR Contact: 01/30/2017
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: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 913-551-7003
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 913-551-7003
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 913-551-7003
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 913-551-7003
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 10/14/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

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: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
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: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
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: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

HWS DETAIL: Registry Annual Report

Each site is described in detail in this annual report and includeds the following information: a general description of the site; a summary of any significant environmental problems at and near the site; a summary of any serious health problems in the immediate vicinity of the site; the status of any testing, monitoring or remedial actions in progress or recommended by the department.

Date of Government Version: 06/30/2015
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 59

Source: Department of Natural Resources
Telephone: 573-751-3176
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 07/02/5007
Data Release Frequency: Annually

SHWS: Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 90

Source: Department of Natural Resources
Telephone: 573-751-1990
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

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

SWF/LF: Solid Waste Facility List

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: 08/29/2016
Date Data Arrived at EDR: 08/31/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 54

Source: Department of Natural Resources
Telephone: 573-751-5401
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tanks

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: 06/07/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 52

Source: Department of Natural Resources
Telephone: 573-751-0135
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

LAST: Leaking Aboveground Storage Tanks
A listing of leaking aboveground storage tanks.

Date of Government Version: 06/07/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 52

Source: Department of Natural Resources
Telephone: 573-751-6822
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Quarterly

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: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

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: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

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: 10/11/2016
Next Scheduled EDR Contact: 01/23/2017
Data Release Frequency: Varies

UST: Petroleum Storage Tanks
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/07/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: 573-751-0135
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tanks
Registered Aboveground Storage Tanks.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 43

Source: Department of Agriculture
Telephone: 573-751-7062
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

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: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Semi-Annually

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: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

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: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Quarterly

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: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

AUL: Sites with Controls
Activity and use limitations include both engineering controls and institutional controls.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 08/17/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 68

Source: Department of Natural Resources
Telephone: 573-751-3176
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

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: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
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

VCP: Sites Participating in the Voluntary Cleanup Program
Sites participating in the Voluntary Cleanup Program.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 08/17/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 68

Source: Department of Natural Resources
Telephone: 573-526-8913
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Semi-Annually

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Site List
Brownfields are sites where redevelopment and reuse is hampered by known or suspected contamination with hazardous substances. While many brownfield sites are minimally contaminated, potential environmental liability can be a problem for owners, operators, prospective buyers and financial institutions. Because of the large number of these sites, their economic impact especially in heavily industrial areas is substantial.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 08/17/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 68

Source: Department of Natural Resources
Telephone: 573-526-8913
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Semi-Annually

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/22/2016	Telephone: 202-566-2777
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 09/21/2016
Number of Days to Update: 72	Next Scheduled EDR Contact: 01/02/2017
	Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF: Solid Waste Facility Database List

This database contains detailed information per site. It is no longer maintained by the Department of Natural Resources. For current information on solid waste facilities/landfills see the SWF/LF database.

Date of Government Version: 04/12/2005	Source: Department of Natural Resources
Date Data Arrived at EDR: 07/19/2006	Telephone: 573-751-5401
Date Made Active in Reports: 08/18/2006	Last EDR Contact: 01/12/2009
Number of Days to Update: 30	Next Scheduled EDR Contact: 04/13/2009
	Data Release Frequency: No Update Planned

SWRCY: Solid Waste Recycling Facilities

A listing of recycling center locations.

Date of Government Version: 06/05/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 06/07/2016	Telephone: 573-526-3944
Date Made Active in Reports: 08/05/2016	Last EDR Contact: 08/26/2016
Number of Days to Update: 59	Next Scheduled EDR Contact: 12/12/2016
	Data Release Frequency: Varies

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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/03/2007	Telephone: 703-308-8245
Date Made Active in Reports: 01/24/2008	Last EDR Contact: 08/05/2016
Number of Days to Update: 52	Next Scheduled EDR Contact: 11/14/2016
	Data Release Frequency: Varies

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	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-947-4219
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 10/24/2016
Number of Days to Update: 137	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: No Update Planned

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

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

CDL: Environmental Emergency Response System
Incidents reported to the Department of Natural Resources where drug lab materials were involved.

Date of Government Version: 06/14/2016
Date Data Arrived at EDR: 06/24/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: 573-751-3443
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

DEL SHWS: Registry Sites Withdrawn or Deleted
A list of sites that were removed from the Registry or for which Registry action was suspended due to cleanup.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 90

Source: Department of Natural Resources
Telephone: 573-522-3710
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

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: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
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: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

SPILLS: Environmental Response Tracking Database
Releases of hazardous substances reported to the department's Environmental Emergency Response (EER) section.

Date of Government Version: 06/14/2016
Date Data Arrived at EDR: 06/24/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: 573-526-3349
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/27/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
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: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 913-551-7003
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 10/14/2016
Number of Days to Update: 62	Next Scheduled EDR Contact: 01/23/2017
	Data Release Frequency: Semi-Annually

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	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 10/14/2016
Number of Days to Update: 339	Next Scheduled EDR Contact: 01/23/2017
	Data Release Frequency: N/A

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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2011	Telephone: 615-532-8599
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 10/20/2016
Number of Days to Update: 54	Next Scheduled EDR Contact: 11/28/2016
	Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 07/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/17/2016	Telephone: 202-566-1917
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 08/17/2016
Number of Days to Update: 65	Next Scheduled EDR Contact: 11/28/2016
	Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 08/08/2016
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/21/2016
	Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

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: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

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: 10/24/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Annually

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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
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: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/14/2016
Next Scheduled EDR Contact: 01/23/2017
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: 07/27/2016
Date Data Arrived at EDR: 08/05/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/11/2016
Next Scheduled EDR Contact: 01/23/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
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: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant 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: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
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: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
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: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

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: 10/03/2016
Date Data Arrived at EDR: 10/05/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
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

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
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: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

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: 10/14/2016
Next Scheduled EDR Contact: 01/23/2017
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 10/20/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US 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: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (913) 551-7003
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 10/17/2016
Next Scheduled EDR Contact: 01/30/2017
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

AIRS: Permit Facility Listing
A listing of Air Pollution Control Program permits.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/11/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 25

Source: Department of Natural Resources
Telephone: 573-751-4817
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites
A listing of power plants with coal ash ponds.

Date of Government Version: 01/14/2016
Date Data Arrived at EDR: 04/08/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 32

Source: Department of Natural Resources
Telephone: 573-526-1825
Last EDR Contact: 09/30/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

DRYCLEANERS: Drycleaners in Missouri Listing
A listing of drycleaner facilities that are potentially eligible for reimbursement of department approved cleanup costs under the Drycleaning Environmental Response Trust Fund.

Date of Government Version: 05/11/2016
Date Data Arrived at EDR: 05/19/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 78

Source: Department of Natural Resources
Telephone: 573-526-8913
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information.

Date of Government Version: 06/07/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 52

Source: Department of Natural Resources
Telephone: 573-751-3553
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
Financial assurance information for solid 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: 06/06/2016
Date Data Arrived at EDR: 06/08/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 58

Source: Department of Natural Resources
Telephone: 573-751-5401
Last EDR Contact: 09/08/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

MINES: Industrial Mineral Mines Database

This data set contains names, locations and additional data for active Industrial Mineral Mines permitted with the Missouri Department of Natural Resources, Division of Environmental Quality, Land Reclamation Program. Industrial Mineral Mines permitted are rock quarries, clay pits, sand and gravel pits, or in-stream sand and gravel operations.

Date of Government Version: 09/12/2014
Date Data Arrived at EDR: 10/23/2014
Date Made Active in Reports: 12/01/2014
Number of Days to Update: 39

Source: Department of Natural Resources
Telephone: 573-751-4041
Last EDR Contact: 10/21/2016
Next Scheduled EDR Contact: 01/30/2017
Data Release Frequency: Varies

NPDES: Permitted Facility Listing

A listing of permitted facilities from the Water Pollution Branch.

Date of Government Version: 10/13/2016
Date Data Arrived at EDR: 10/14/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 10

Source: Department of Natural Resources
Telephone: 573-751-7023
Last EDR Contact: 09/30/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

RRC: Certified Hazardous Waste Resource Recovery Facilities

Facilities that take hazardous waste material, either from on-site or off-site, and make it re-usable.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/05/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: 573-751-3176
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

SMARS: Site Management and Reporting System

SMARS currently houses information for Superfund, Federal Facility, Brownfields Voluntary Cleanup Program and Missouri's other state response programs.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 08/03/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 82

Source: Department of Natural Resources
Telephone: 573-751-3043
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Database

A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 62

Source: Department of Natural Resources
Telephone: 573-368-2183
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 59

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/18/2016
Date Data Arrived at EDR: 09/20/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: 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 Hist Auto: EDR Exclusive 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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 Hist Cleaner: EDR Exclusive 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. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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 RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
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: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: No Update Planned

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: 08/01/2016
Date Data Arrived at EDR: 08/03/2016
Date Made Active in Reports: 09/09/2016
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/14/2016
Next Scheduled EDR Contact: 01/30/2017
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: Licensed Child Care Facilities
Source: Department of Health & Senior Services
Telephone: 573-751-2450

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: National Wetland Inventory of Missouri
Source: Department of Natural Resources
Telephone: 573-751-5110

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HOLDEN BUSINESS PARK
500 WEST MCKISSOCK STREET
HOLDEN, MO 64040

TARGET PROPERTY COORDINATES

Latitude (North):	38.71915 - 38˚ 43’ 8.94’’
Longitude (West):	93.99443 - 93˚ 59’ 39.95’’
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	413548.0
UTM Y (Meters):	4285873.0
Elevation:	841 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	6723071 HOLDEN, MO
Version Date:	2014
Southwest Map:	6723599 KINGSVILLE, MO
Version Date:	2014

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 principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

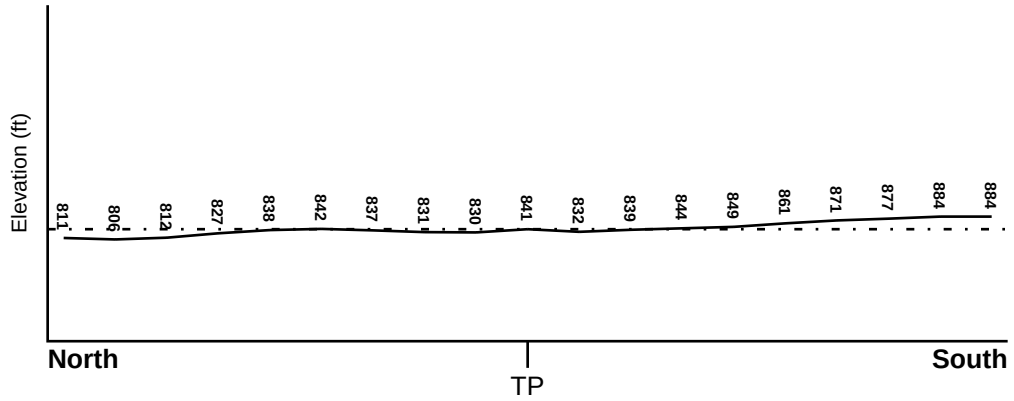
TOPOGRAPHIC INFORMATION

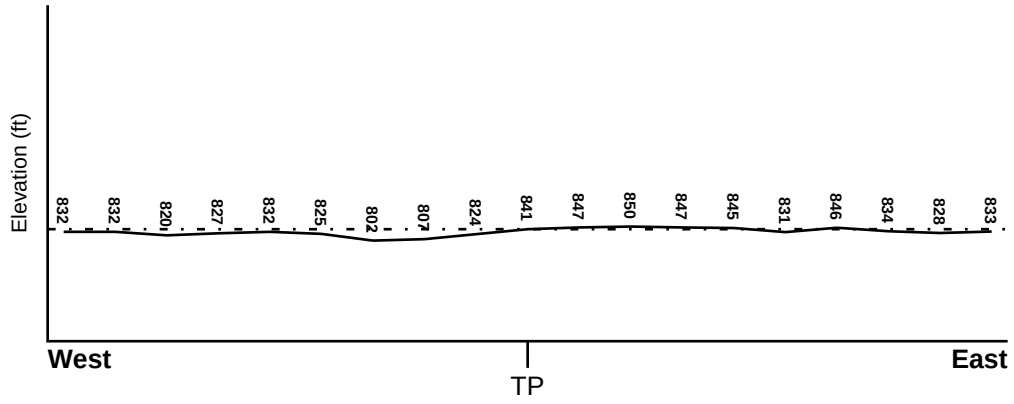
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 841 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

Flood Plain Panel at Target Property	FEMA Source Type
29101C0355E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
29101C0335E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
HOLDEN	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.

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
Not Reported		

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

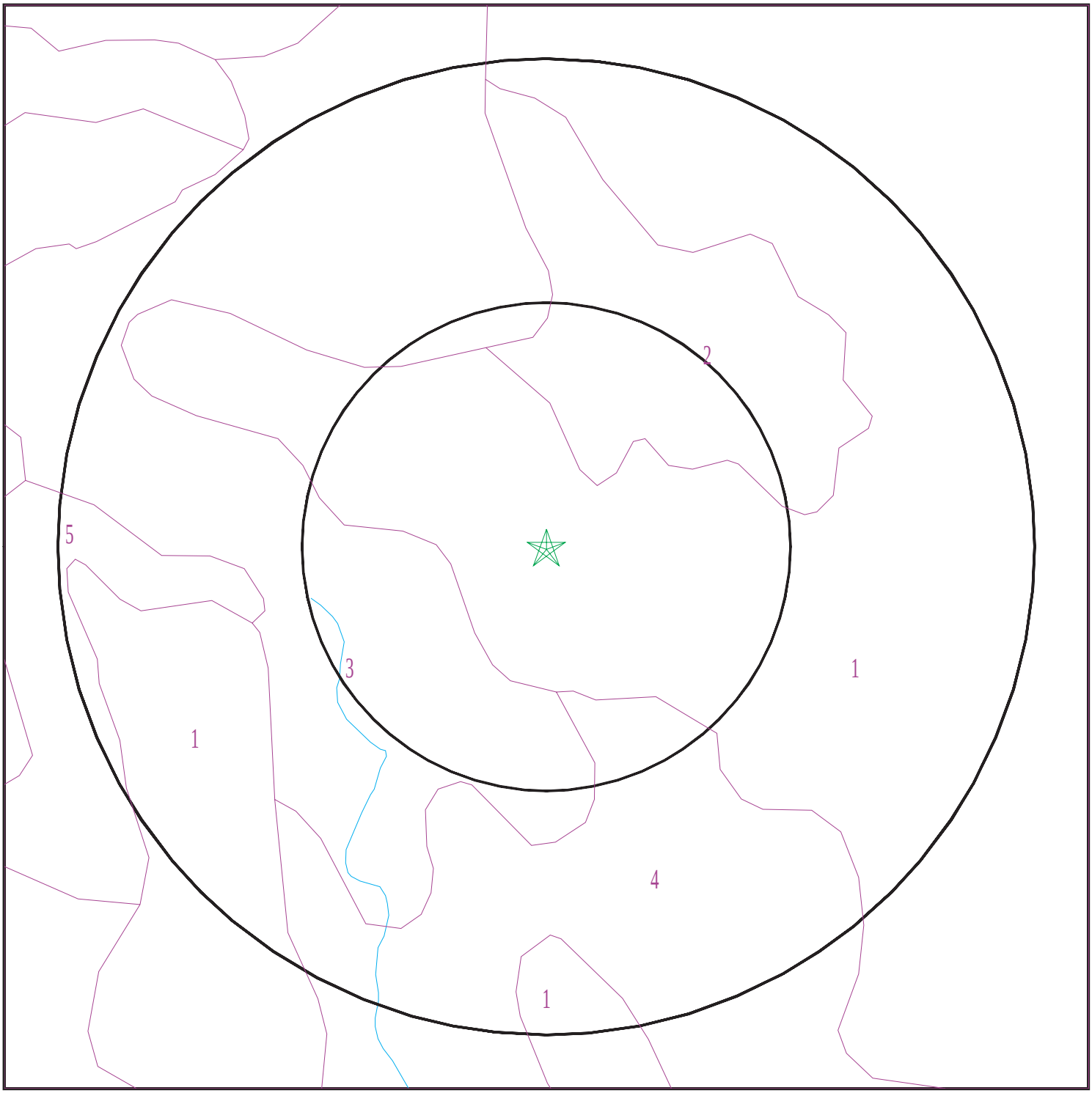
Era:	Paleozoic
System:	Pennsylvanian
Series:	Des Moinesian Series
Code:	PP2 *(decoded above as Era, System & Series)*

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).

SSURGO SOIL MAP - 4767920.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Holden Business Park	CLIENT:	Seagull Env. Technologies
ADDRESS:	500 West Mckissock Street Holden MO 64040	CONTACT:	Jon Debruine
		INQUIRY #:	4767920.2s
LAT/LONG:	38.71915 / 93.99443	DATE:	October 31, 2016 3:45 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Haig

Soil Surface Texture: silt loam

Hydrologic Group: Class C/D - Drained/undrained hydrology class of soils that can be drained and classified.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 46 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 14.11 Min: 4.233	Max: 6.5 Min: 5.6
2	7 inches	12 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.233	Max: 6.5 Min: 5.1
3	12 inches	38 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.411 Min: 0.4233	Max: 6 Min: 5.1
4	38 inches	64 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.233 Min: 1.411	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: Sampsel

Soil Surface Texture: silty clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 23 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.233 Min: 1.411	Max: 7.3 Min: 5.6
2	11 inches	75 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.411 Min: 0.4233	Max: 7.8 Min: 5.6

Soil Map ID: 3

Soil Component Name: Sampsel

Soil Surface Texture: silty clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 23 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.233 Min: 1.411	Max: 7.3 Min: 5.6
2	7 inches	75 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.411 Min: 0.4233	Max: 7.8 Min: 5.6

Soil Map ID: 4

Soil Component Name: Sampsel

Soil Surface Texture: silty clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 23 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	12 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.233 Min: 1.411	Max: 7.3 Min: 5.6
2	12 inches	75 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.411 Min: 0.4233	Max: 7.8 Min: 5.6

Soil Map ID: 5

Soil Component Name: Norris

Soil Surface Texture: channery silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.233	Max: 5.5 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	16 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.233	Max: 5.5 Min: 4.5
3	16 inches	59 inches	bedrock	Not reported	Not reported	Max: 1.411 Min: 0.4233	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000695741	1/4 - 1/2 Mile East

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

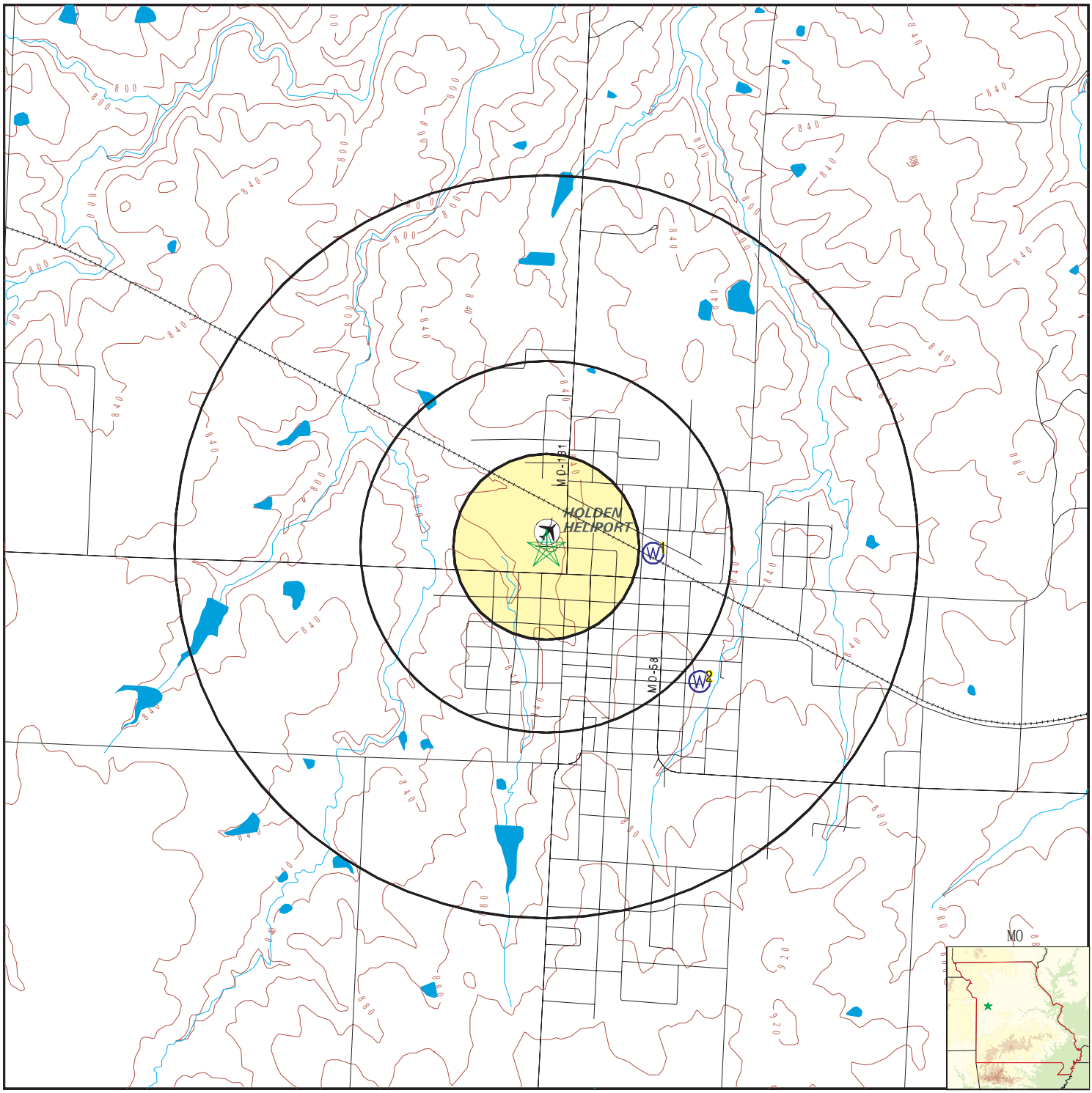
MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	MOLOG1000018880	1/2 - 1 Mile SE

PHYSICAL SETTING SOURCE MAP - 4767920.2s



County Boundary
Major Roads
Contour Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Oil, gas or related wells

N

SITE NAME: Holden Business Park ADDRESS: 500 West Mckissock Street Holden MO 64040 LAT/LONG: 38.71915 / 93.99443	CLIENT: Seagull Env. Technologies CONTACT: Jon Debruine INQUIRY #: 4767920.2s DATE: October 31, 2016 3:44 pm

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **East** **1/4 - 1/2 Mile** **Higher**	**FED USGS**	**USGS40000695741**

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-384308093592001		
Monloc name:	T45N R28W 11		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300104	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.7188999
Longitude:	-93.989108	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	minutes
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	824
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	Roubidoux Formation		
Aquifer type:	Confined multiple aquifer		
Construction date:	Not Reported	Welldepth:	1049
Welldepth units:	ft	Wellholedepth:	1049
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

---

2 **SE** **1/2 - 1 Mile** **Higher**	**MO WELLS**	**MOLOG1000018880**

Id:	000214	Located:	Not Reported
Notenough:	Not Reported	Scale:	100k
Locator:	VBProgram	Stname:	MISSOURI
Stabbrev:	MO	County:	JOHNSON
Utm x:	414206		
Utm y:	4285282		
Latitude:	38.71389		
Longitude:	-93.98679		
Qtr3:	C	Qtr2:	SW
Qtr1:	Not Reported		
Section:	11		
Tnsp:	45		
Tnspdir:	Not Reported		
Rng:	28		
Rngdir:	W		
Plssx:	414406		
Plssy:	4285690		
Location p:	577		
Elev:	870		
Idnum:	214		

Swl:	0		
Quadrangle:	HOLDEN	Site id:	MOLOG1000018880

Header Information:

Id:	000214	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	JOHNSON
Fips:	101	Stname:	MISSOURI
Stabbrev:	MO	Qtr3:	C
Qtr2:	SW	Qtr1:	Not Reported
Section:	11	Tnsp:	45
Tnspdir:	N	Rng:	28
Rngdir:	W		
Latitude:	38.71389		
Longitude:	-93.98679		
Utm x:	414206		
Utm y:	4285282		
Quadmap na:	HOLDEN	Ohio code:	38093F8
Llmeas:	D	Scale:	100k
Locator:	VBProgram	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	0	Owner:	Johnson, J.V.
Leasenam:	Not Reported	Driller:	Austin & Carnes
Drldate:	1905/08/04	Permit:	Not Reported
Logdate:	0000/00/00	Logger:	Grohskopf
Elev:	870		
Elevbase:	S	Prodyld:	Not Reported
Gpmcfs:	Not Reported		
Depthbed:	10		
Sampsav:	1	Swla:	Not Reported
Swlb:	Not Reported		
Water at:	Not Reported		
Totdepth:	562	Formation :	PENNSYLVANIAN SYSTEM
Formation1:	KEOKUK-BURLINGTON LS. UNDIFF		
Intcrdtp:	0		
Intcrdbt:	0		
Drawdown:	Not Reported	Aquclass:	Not Reported
Confind:	0	Reldate:	Not Reported
Probind1:	Not Reported	Probind2:	Not Reported
Probind3:	Not Reported	Additional:	Not Reported
Alagncy1:	Not Reported	Add databa:	Not Reported
Addition 1:	Not Reported	Add data 1:	Not Reported
Alnum2:	Not Reported	Add data 2:	Not Reported
Add data 3:	Not Reported	Rmkind:	N
C total:	0	C plugind:	Not Reported
C remarks:	Not Reported		

Strata Information:

Id:	000214	Stratordr:	4800
Fmtop:	0		
Fmbot:	500		
Formation :	PENNSYLVANIAN SYSTEM		
Primlith:	SHALE		
Seclith:	SAND	Minlith:	LIMESTONE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	000214	Stratordr:	32200
Fmtop:	500		
Fmbot:	562		
Formation :	KEOKUK-BURLINGTON LS. UNDIFF		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	000214	Stratordr:	99900
Fmtop:	562		
Fmbot:	562		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for JOHNSON 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 Zip Code: 64040

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.500 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	4.800 pCi/L	0%	100%	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.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: National Wetland Inventory of Missouri
Source: Department of Natural Resources
Telephone: 573-751-5110

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 Service (NRCS)
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 Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, 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

Missouri Public Drinking Water Wells
Source: Department of Natural Resources
Telephone: 573-526-5448

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Database
Source: Department of Natural Resources
Telephone: 573-368-2143

RADON

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

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX G
HISTORICAL USE DOCUMENTATION

Holden Business Park

500 West Mckissock Street

Holden, MO 64040

Inquiry Number: 4767920.9

October 31, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/31/16

Site Name:

Holden Business Park
500 West Mckissock Street
Holden, MO 64040
EDR Inquiry # 4767920.9

Client Name:

Seagull Env. Technologies
731 Limestone Dr
Prosper, TX 75078
Contact: Jon Debruine

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2007	1"=500'	Flight Year: 2007	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1995	1"=500'	Acquisition Date: March 10, 1995	USGS/DOQQ
1990	1"=750'	Flight Date: March 16, 1990	USGS
1985	1"=1000'	Flight Date: March 05, 1985	USGS
1981	1"=1000'	Flight Date: November 13, 1981	USGS
1958	1"=500'	Flight Date: April 17, 1958	USGS
1952	1"=500'	Flight Date: February 09, 1952	USGS

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INQUIRY #: 4767920.9

YEAR: 2012

= 500'

N

EDR

INQUIRY #: 4767920.9

YEAR: 2010

= 500'

N

EDR

INQUIRY #: 4767920.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 4767920.9

YEAR: 2007

= 500'

N

EDR

INQUIRY #: 4767920.9
YEAR: 2006
= 500'
N
EDR

INQUIRY #: 4767920.9

YEAR: 2005

= 500'

N

EDR

INQUIRY #: 4767920.9

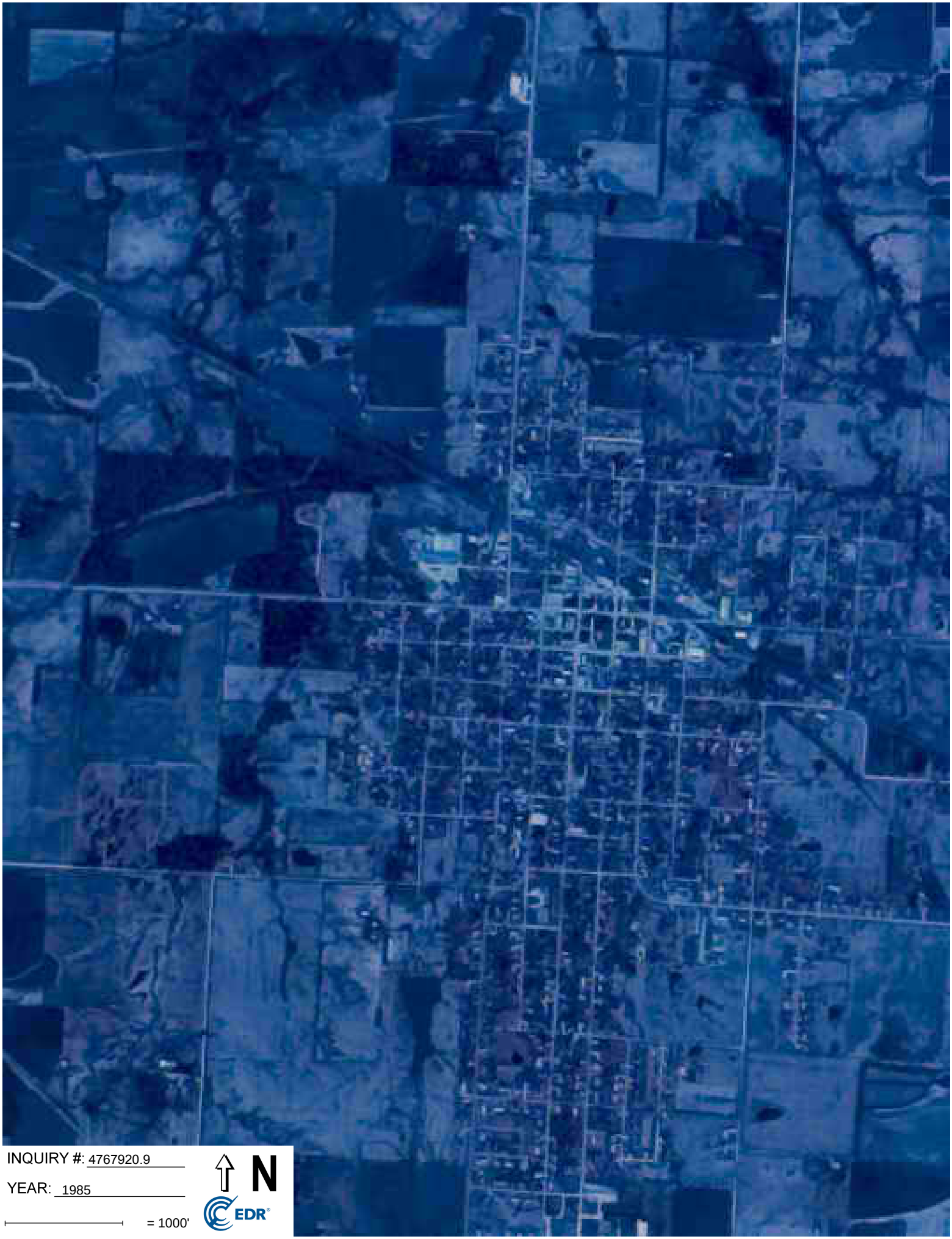
YEAR: 1995

= 500'

N

EDR

INQUIRY #: 4767920.9
YEAR: 1990
= 750'
N
EDR



INQUIRY #: 4767920.9

YEAR: 1985

= 1000'

N

EDR

INQUIRY #: 4767920.9

YEAR: 1981

= 1000'

N

EDR

INQUIRY #: 4767920.9
YEAR: 1958
= 500'
N
EDR

INQUIRY #: 4767920.9

YEAR: 1952

= 500'

N

EDR

Holden Business Park

500 West Mckissock Street

Holden, MO 64040

Inquiry Number: 4767920.3

October 31, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/31/16

Site Name:	Client Name:
Holden Business Park	Seagull Env. Technologies
500 West Mckissock Street	731 Limestone Dr
Holden, MO 64040	Prosper, TX 75078
EDR Inquiry # 4767920.3	Contact: Jon Debruine

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Seagull Env. Technologies were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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Certified Sanborn Results:

Certification # 9DB0-4C27-B5B1

PO # NA

Project Holden Business Park

Maps Provided:

1931
1914
1907
1898

Sanborn® Library search results

Certification #: 9DB0-4C27-B5B1

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others 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

The Sanborn Library LLC Since 1866™

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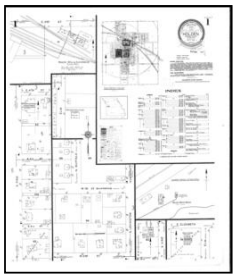
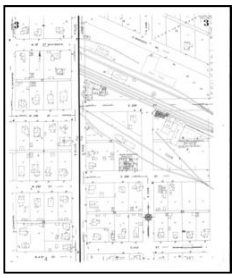
Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

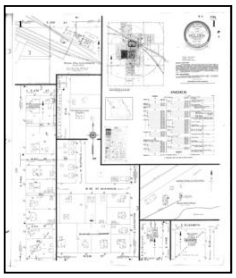
1931 Source Sheets



Volume 1, Sheet Keymap/Sheet1
1931



Volume 1, Sheet 3
1931



Volume 1, Sheet Keymap/Sheet1
1931

Volume 1, Sheet 3
1931

1914 Source Sheets

Volume 1, Sheet 2
1914

Volume 1, Sheet 5
1914

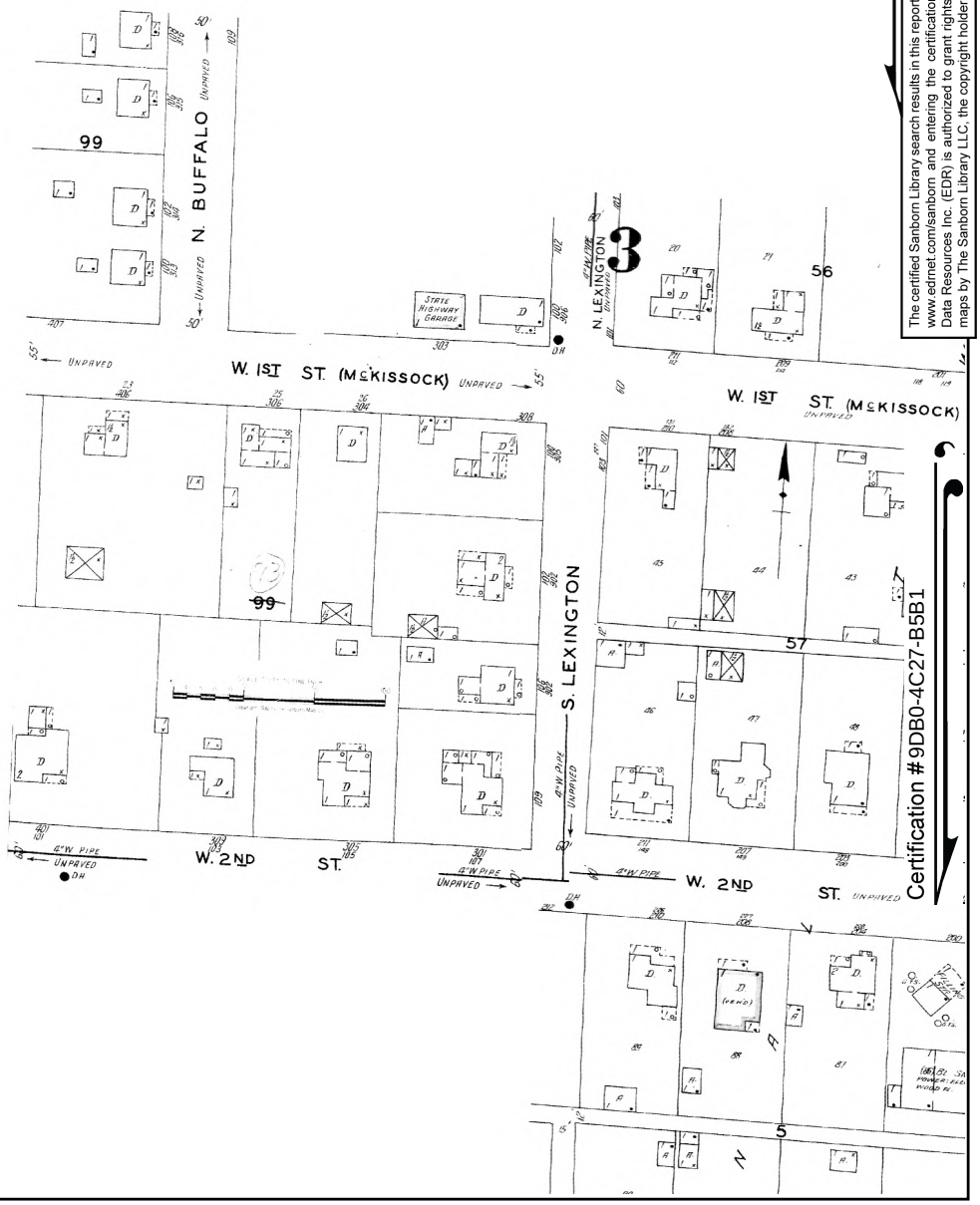
1907 Source Sheets

Volume 1, Sheet 2
1907

Volume 1, Sheet 5
1907

1898 Source Sheets

Volume 1, Sheet 2
1898



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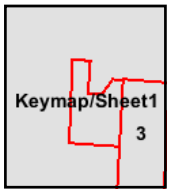
Site Name:	Holden Business Park
Address:	500 West Mckissock Street
City, ST, ZIP:	Holden, MO 64040
Client:	Seagull Env. Technologies
EDR Inquiry:	4767920.3
Order Date:	10/31/2016
Certification #	9DB0-4C27-B5B1
Copyright	1931

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600

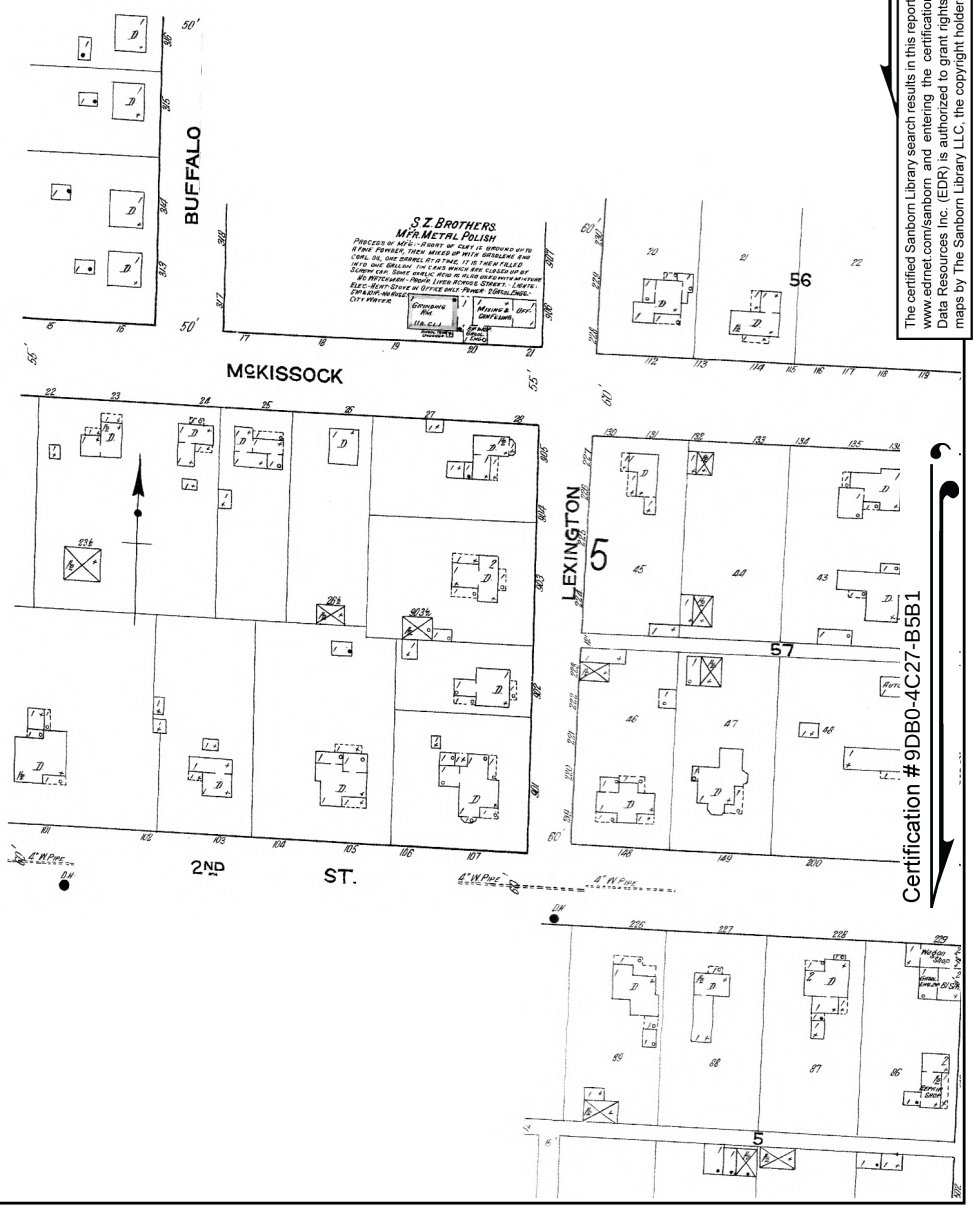


Volume 1, Sheet 3
Volume 1, Sheet Keymap/Sheet1
Volume 1, Sheet 3
Volume 1, Sheet Keymap/Sheet1

N

Certified Sanborn® Map

1914



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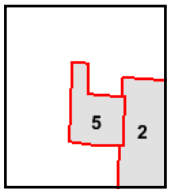
Certification #9DB0-4C27-B5B1

Site Name:	Holden Business Park
Address:	500 West Mckissock Street
City, ST, ZIP:	Holden, MO 64040
Client:	Seagull Env. Technologies
EDR Inquiry:	4767920.3
Order Date:	10/31/2016
Certification #	9DB0-4C27-B5B1
Copyright	1914

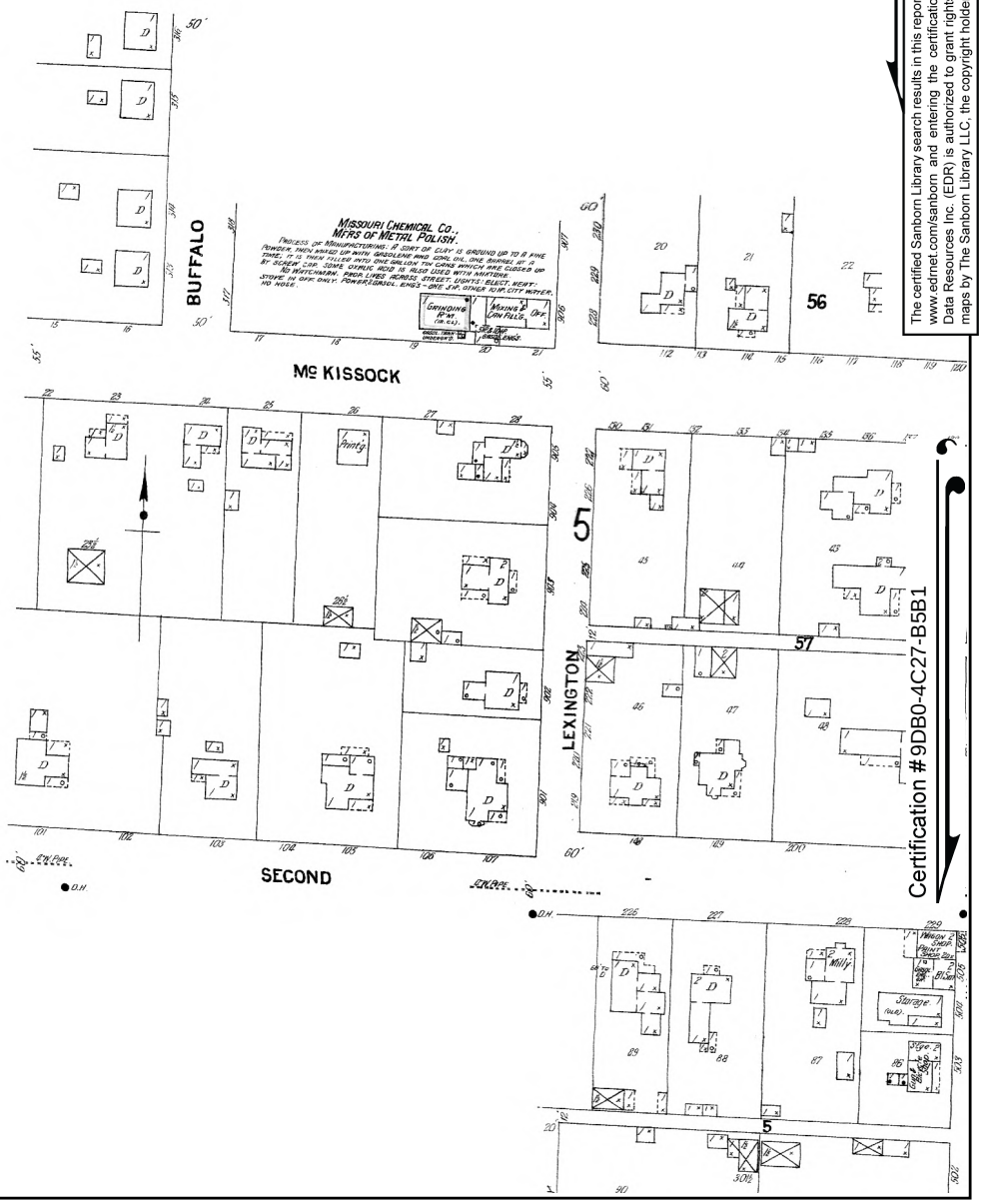
This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600



Volume 1, Sheet 5
Volume 1, Sheet 2

N



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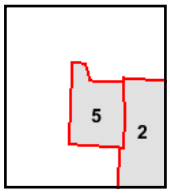
Certification #9DB0-4C27-B5B1

Site Name:	Holden Business Park
Address:	500 West Mckissock Street
City, ST, ZIP:	Holden, MO 64040
Client:	Seagull Env. Technologies
EDR Inquiry:	4767920.3
Order Date:	10/31/2016
Certification #	9DB0-4C27-B5B1
Copyright	1907

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600

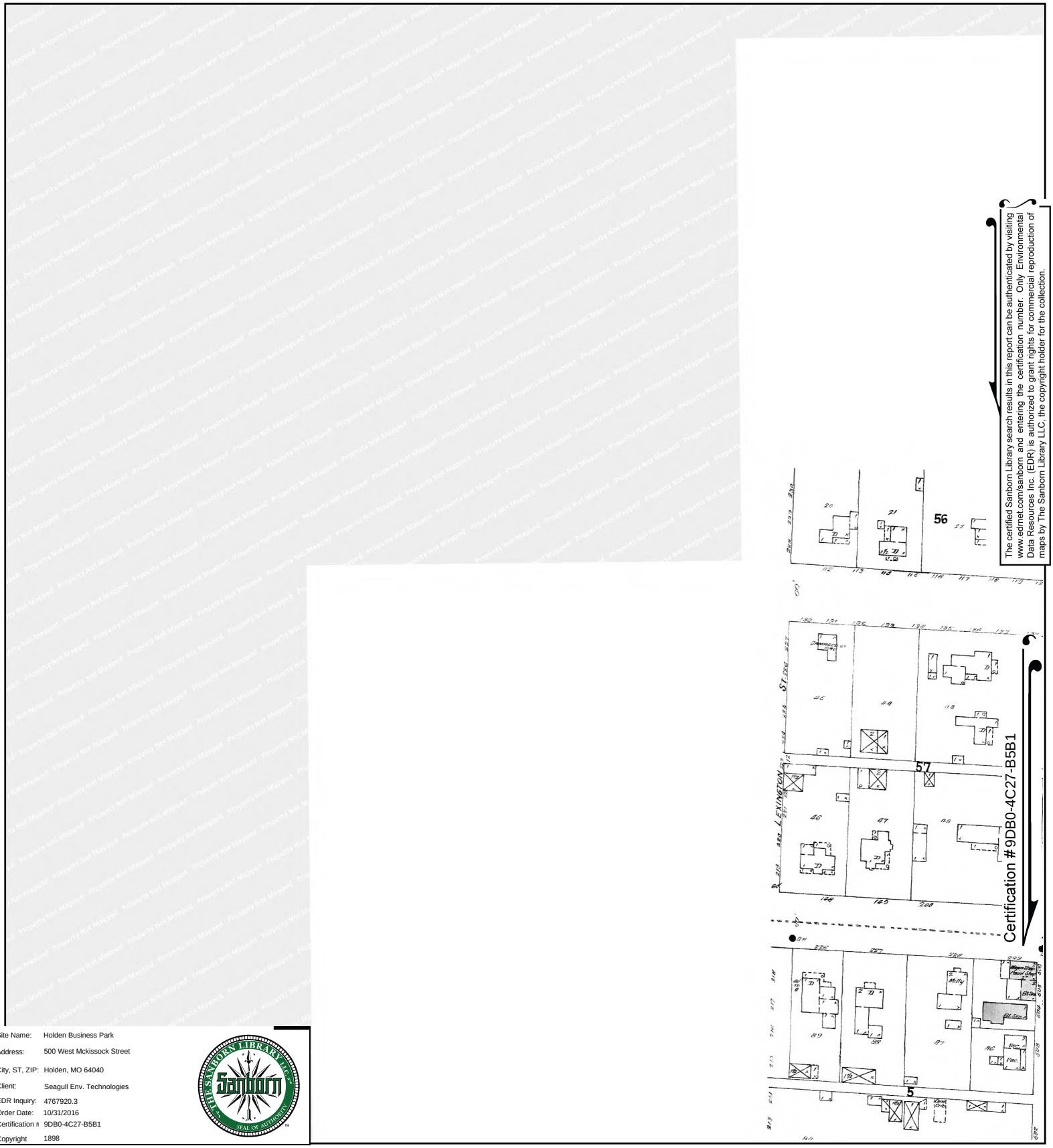


Volume 1, Sheet 5
Volume 1, Sheet 2

N

Certified Sanborn® Map

1898



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Site Name:	Holden Business Park
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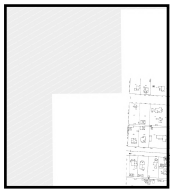
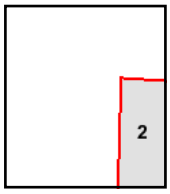
City, ST, ZIP:	Holden, MO 64040
Client:	Seagull Env. Technologies
EDR Inquiry:	4767920.3
Order Date:	10/31/2016
Certification #	9DB0-4C27-B5B1
Copyright	1898

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600





Volume 1, Sheet 2

N

Holden Business Park

500 West Mckissock Street

Holden, MO 64040

Inquiry Number: 4767920.4

October 31, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/31/16

Site Name:	Client Name:
Holden Business Park	Seagull Env. Technologies
500 West Mckissock Street	731 Limestone Dr
Holden, MO 64040	Prosper, TX 75078
EDR Inquiry # 4767920.4	Contact: Jon Debruine

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Seagull Env. Technologies were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	38.71915 38° 43' 9" North
Project:	Holden Business Park	**Longitude:**	-93.99443 -93° 59' 40" West
		UTM Zone:	Zone 15 North
		UTM X Meters:	413550.23
		UTM Y Meters:	4286080.40
		Elevation:	841.18' above sea level

Maps Provided:

2014
1954
1894
1887
1885

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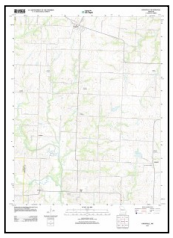
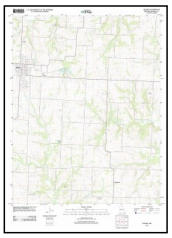
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2014 Source Sheets

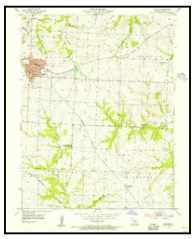


Kingsville
2014
7.5-minute, 24000



Holden
2014
7.5-minute, 24000

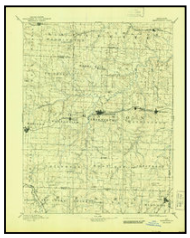
1954 Source Sheets



Holden
1954
7.5-minute, 24000
Aerial Photo Revised 1952

Kingsville
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1894 Source Sheets



Warrensburg
1894
30-minute, 125000

Harrisonville
1894
30-minute, 125000

1887 Source Sheets

Harrisonville
1887
30-minute, 125000

Warrensburg
1887
30-minute, 125000

Topo Sheet Key

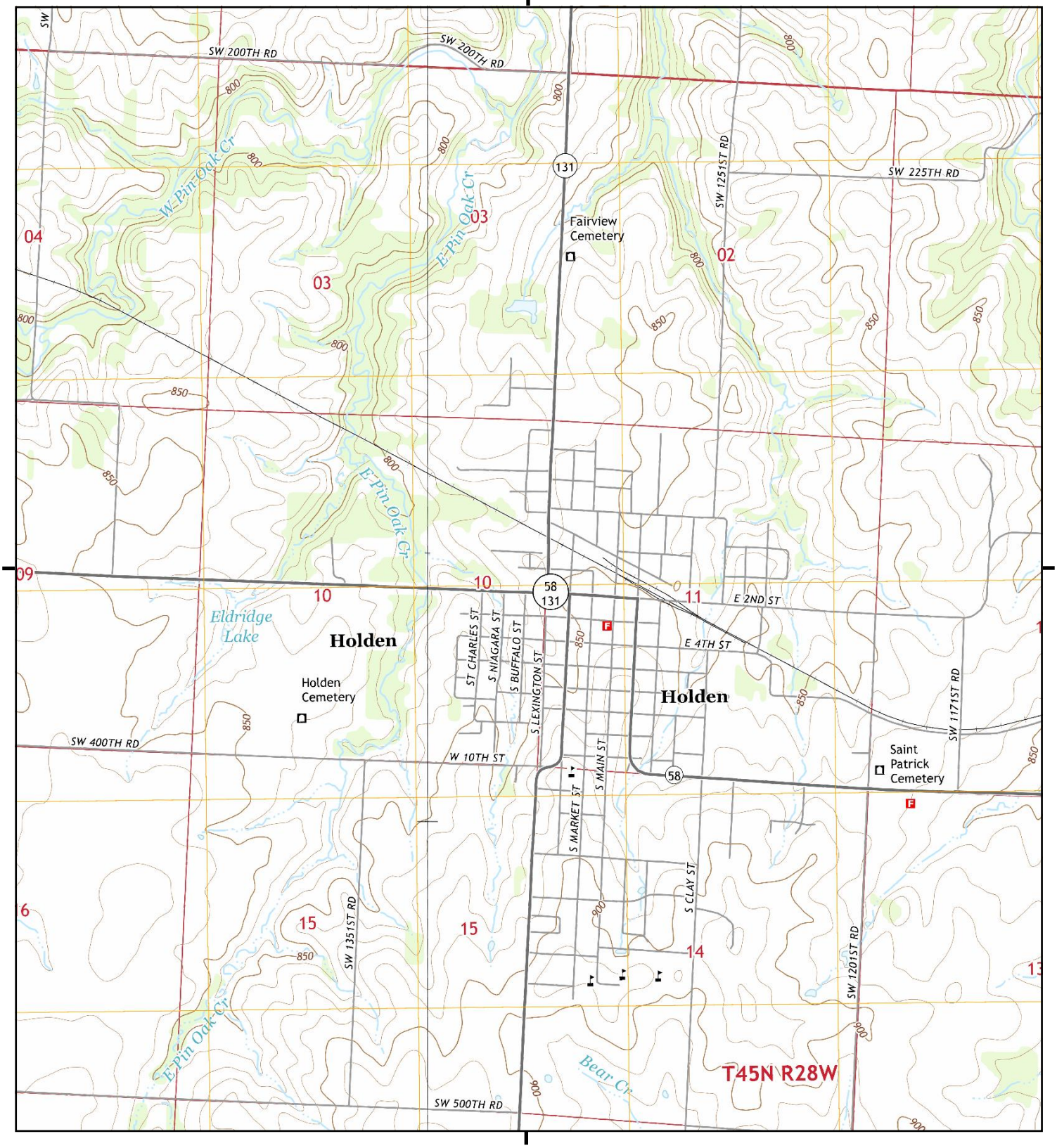
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1885 Source Sheets

Warrensburg
1885
30-minute, 125000

Historical Topo Map

2014



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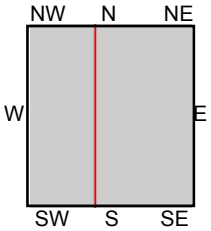
0 Miles 0.25 0.5 1 1.5



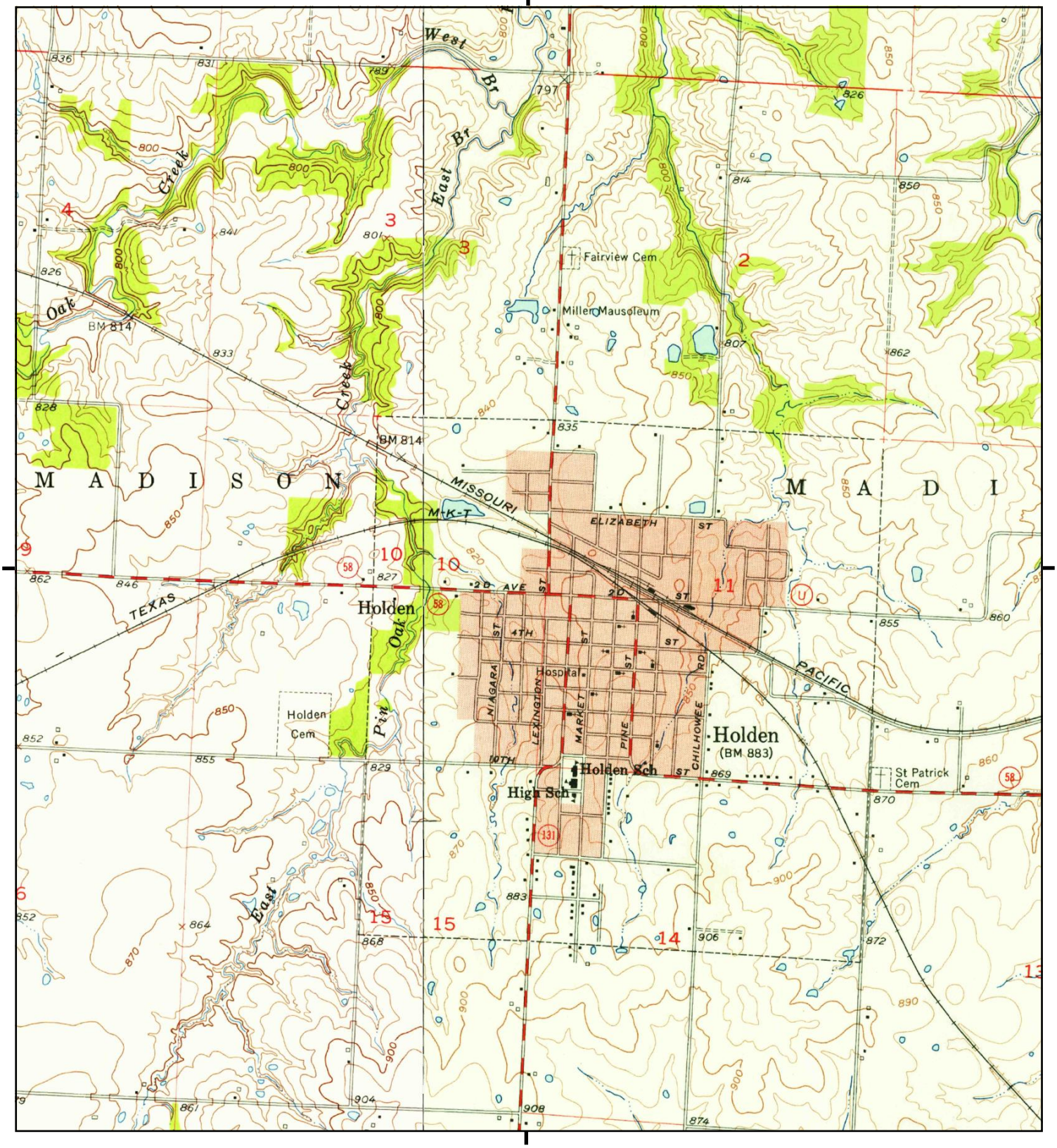
TP, Holden, 2014, 7.5-minute
SW, Kingsville, 2014, 7.5-minute

SITE NAME: Holden Business Park
ADDRESS: 500 West Mckissock Street
Holden, MO 64040
CLIENT: Seagull Env. Technologies

N

Historical Topo Map

1954



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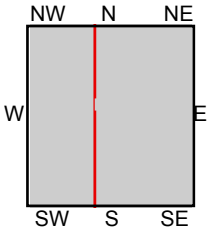


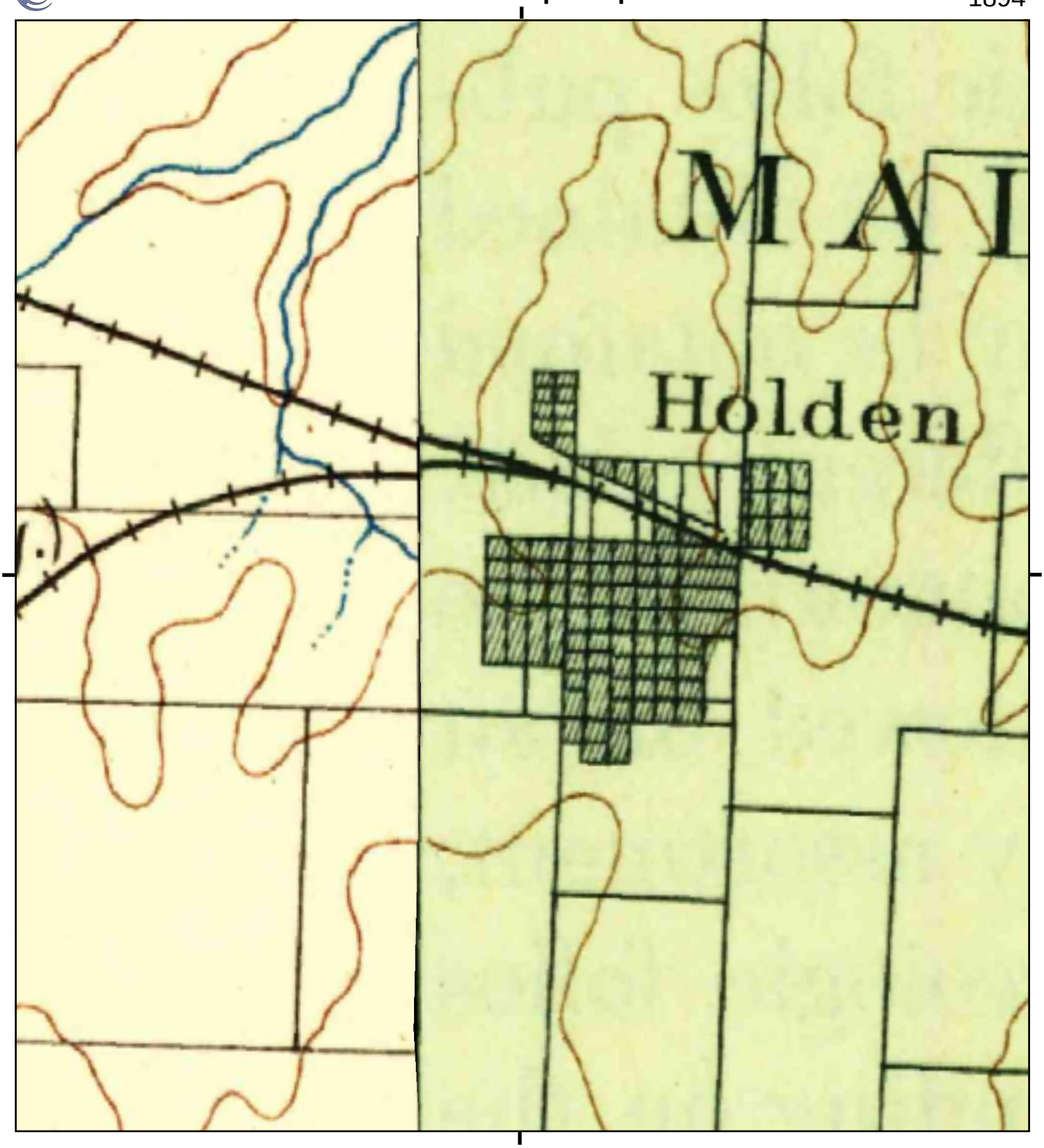
TP, Holden, 1954, 7.5-minute
SW, Kingsville, 1954, 7.5-minute

SITE NAME: Holden Business Park
ADDRESS: 500 West Mckissock Street
Holden, MO 64040
CLIENT: Seagull Env. Technologies

N

Historical Topo Map

1894



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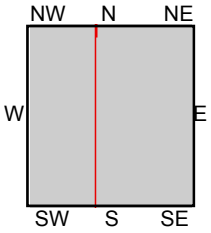


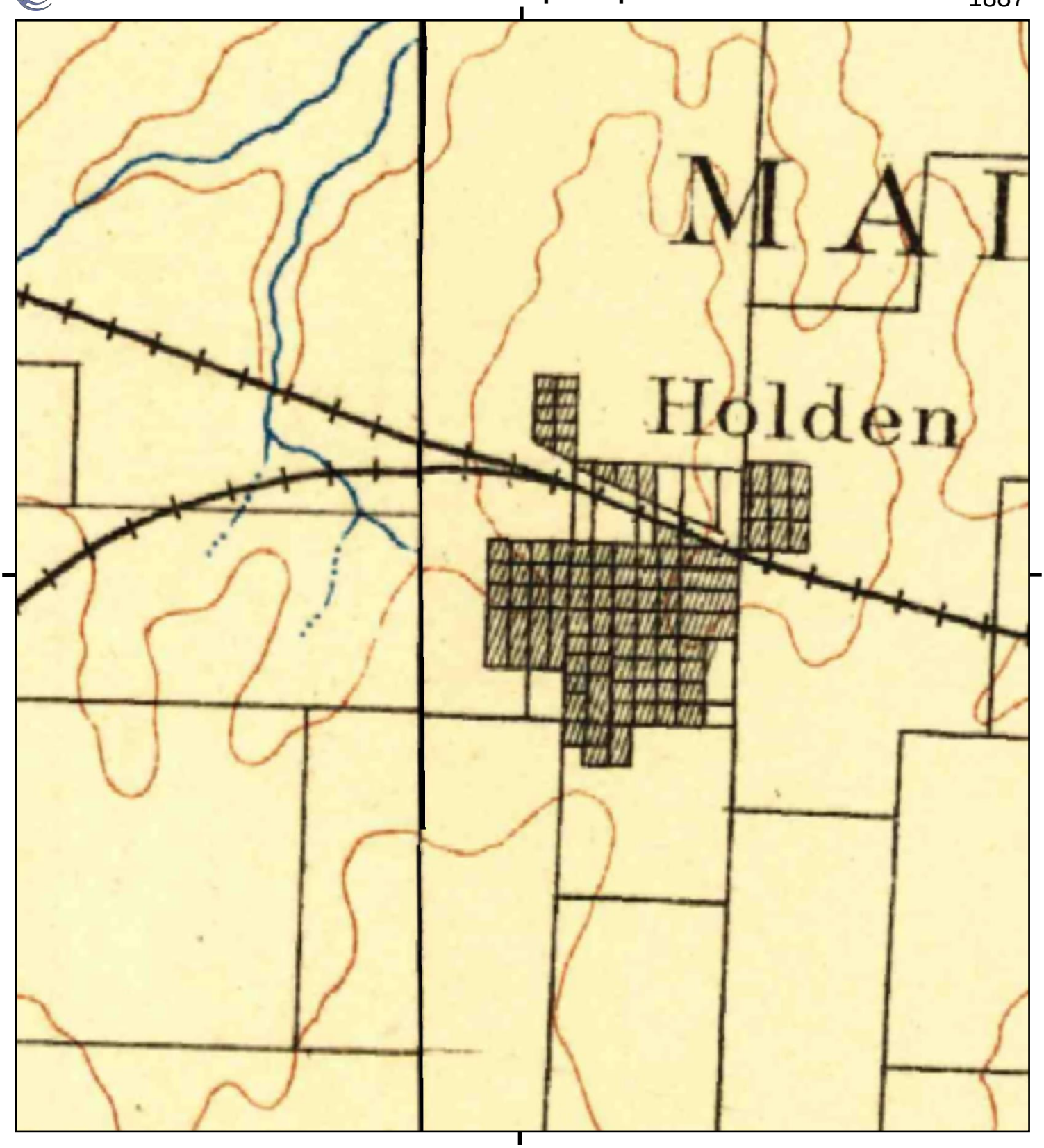
TP, Warrensburg, 1894, 30-minute
W, Harrisonville, 1894, 30-minute

SITE NAME: Holden Business Park
ADDRESS: 500 West Mckissock Street
Holden, MO 64040
CLIENT: Seagull Env. Technologies

N

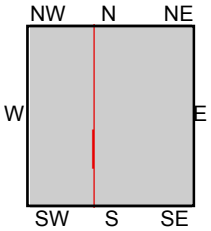
Historical Topo Map

1887



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



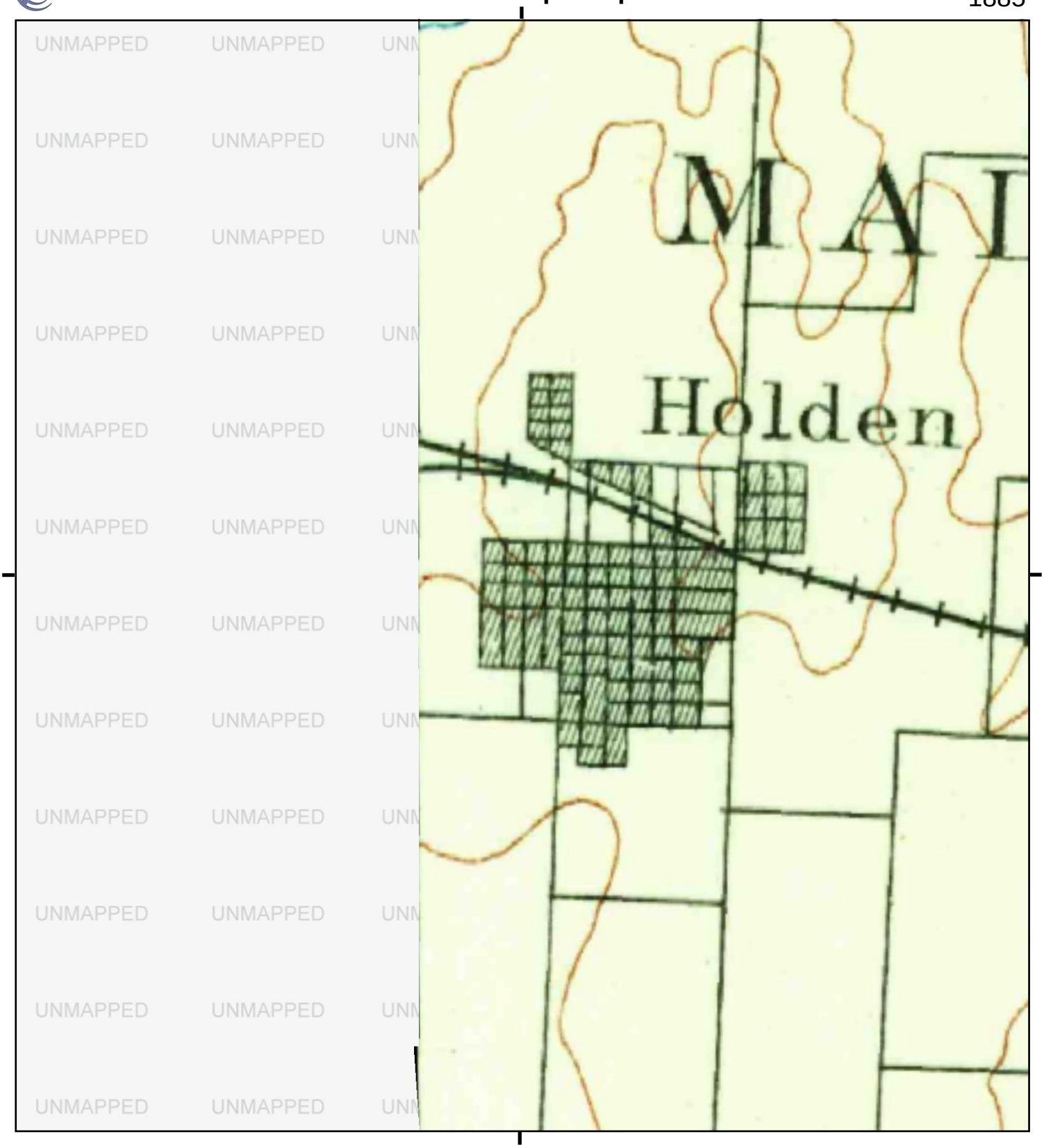
TP, Warrensburg, 1887, 30-minute
W, Harrisonville, 1887, 30-minute

SITE NAME: Holden Business Park
ADDRESS: 500 West Mckissock Street
Holden, MO 64040
CLIENT: Seagull Env. Technologies

N

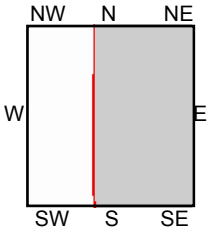
Historical Topo Map

1885



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Warrensburg, 1885, 30-minute

SITE NAME: Holden Business Park
ADDRESS: 500 West Mckissock Street
Holden, MO 64040
CLIENT: Seagull Env. Technologies

N

Holden Business Park
500 West Mckissock Street
Holden, MO 64040

Inquiry Number: 4767920.5
November 03, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1969	☐	☐	Mullin-Kille's City Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

500 West Mckissock Street
Holden, MO 64040

Year	CD Image	Source	
W MCKISSOCK ST			
2013	pg A3	Cole Information Services	
2008	pg A5	Cole Information Services	
2003	pg A8	Cole Information Services	
1999	pg A11	Cole Information Services	
1995	pg A14	Cole Information Services	
1992	pg A17	Cole Information Services	
1969	-	Mullin-Kille's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
N BUFFALO ST			
2013	pg. A1	Cole Information Services	
2008	-	Cole Information Services	Street not listed in Source
2003	pg. A6	Cole Information Services	
1999	pg. A9	Cole Information Services	
1995	pg. A12	Cole Information Services	
1992	pg. A15	Cole Information Services	
1969	-	Mullin-Kille's City Directory	Street not listed in Source
N LEXINGTON ST			
2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	pg. A7	Cole Information Services	
1999	pg. A10	Cole Information Services	
1995	pg. A13	Cole Information Services	
1992	pg. A16	Cole Information Services	
1969	-	Mullin-Kille's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	Cole Information Services

N BUFFALO ST 2013

100 ARBIE MERIDETH

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 2013

102	CARSEEKERS
104	ALBRITE CARWASH
107	GUDDE J F TRUCK & TRACTOR
203	PAWS & MEMAWS LLC TAMMY
300	CHRIS AGCOPRA
302	JUDY TIMMONS
307	JERRY PHENIX
309	ROONEY MOORE
402	LONNIE BLUM
500	BUZZ DOUTT
503	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 2013

200	MARCIA HOYT
	SCOTT HANCOCK
202	KRISTEN FISHER
204	JAMES MCMULLIN
	OCCUPANT UNKNOWN
	SARAH WEST
206	DUSTY DAVIDSON
	JOHN BOYLSON
	KRISTIE SISK
	RICHARD TALLEY
300	JOSHUA HRISTIANSON
304	OCCUPANT UNKNOWN
400	HEET GAS COMPANY
403	COUNTRY COSMETOLOGIST
503	OCCUPANT UNKNOWN
505	JOSEPH JENSEN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 2008

107	J F GUDDE TRUCK & TRACTOR CO
302	CHARLES TROSPER
307	BOBBY BRADLEY
309	ROONEY MOORE
402	LONNIE BLUM
500	BUZZ DOUTT
503	ALBERT LAHUE

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 2008

200	CHERYL GLYNN
	DANA ALBERTS
	MICHELE LINDO
	OCCUPANT UNKNOWN
202	MICHAEL MISKO
204	DEE ROHRER
	JAMES MCMULLIN
	OCCUPANT UNKNOWN
	ROBERT HALL
206	D GARTEN
	GYLIN LYNCH
	JAIME SHIPP
	JOHN BOYLSON
	OCCUPANT UNKNOWN
	RICHARD TALLEY
	TRAVIS LUTZ
300	OCCUPANT UNKNOWN
400	HEAT GAS CO INC
403	COUNTRY COSMETOLOGIST
503	GARY DUNCAN
505	SEAN BROWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N BUFFALO ST 2003

100	JOYCE MCCOY
108	HOLDEN CITY OF STREET BARN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 2003

107	GUDDE J F TRUCK & TRACTOR
203	OCCUPANT UNKNOWN
	SCOTTS SIGNS OF ALL KINDS
300	OCCUPANT UNKNOWN
302	CHARLES TROSPER
307	LOOK HAIRSTYLES
	OCCUPANT UNKNOWN
309	OCCUPANT UNKNOWN
402	LONNIE BLUM
500	WILLIAM DOUTT

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 2003

200	DANA ALBERTS
	MICHELE LINDO
	OCCUPANT UNKNOWN
202	JENNY SOLLARS
204	GENE PARKER
	JAMES MCMULLIN
	JARED JASPER
	OCCUPANT UNKNOWN
300	KAREN CHRISTIANSON
304	JIMMY MCCUBBIN
400	HEET GAS CO
401	SUDS SHOPPE
403	COUNTRY COSMETOLOGIST
	DONNA COOK
503	GARY DUNCAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N BUFFALO ST 1999

100	DON MCCOY
108	HOLDEN CITY OF STREET DEPARTMENT

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 1999

107	JAMES GUDDE
203	R & R AUTO SERVICE
205	OCCUPANT UNKNOWN
300	OMA MILLER
302	CHARLIE TROSPER
307	SHELLEY WERTHS
309	RODNEY MOORE
402	AMBER BLUM
500	BUZZ DOUTT
503	ALBERT LAHUE

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 1999

200	MICHELE LINDO
	WILLIAM HUSKEY
204	GENEVA SMITH
	JAMES MCMULLIN
	OSCAR ZVACEK
300	KAREN CHRISTIANSON
304	JIMMY MCCUBBIN
400	HEET GAS COMPANY
403	DONNA COOK
503	GARY DUNCAN
505	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N BUFFALO ST 1995

100	MCCOY, DON
106	F & K AUTOMOTIVE REPAIR
108	HOLDEN STREET DEPT

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 1995

104	ZIMMER, ZIP
107	J F GUDDE TRUCK & TRACTOR
203	R & R AUTO SVC
284	OCCUPANT UNKNOWNN
300	MILLER, OMA L
302	TROSPER, CHARLIE
307	BRADLEY, SHELLEY
309	MOORE, RODNEY
340	OCCUPANT UNKNOWNN
374	OCCUPANT UNKNOWNN
381	OCCUPANT UNKNOWNN
402	BLUM, AMBER
418	OCCUPANT UNKNOWNN
419	OCCUPANT UNKNOWNN
441	OCCUPANT UNKNOWNN
500	DOUTT, BUZZ
503	BROWNING, DENNIS

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 1995

202	HOLDEN FAMILY CLINIC
	MICHAEL C MISKO MD
204	ZVACEK, OSCAR
206	OUTON, EDITH
304	MCCUBBIN, JIMMY R
400	HEET GAS CO
403	OCCUPANT UNKNOWNN
503	DUNCAN, GARY
505	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
-	✓	Cole Information Services

N BUFFALO ST 1992

100	MCCOY, DON

Target Street	Cross Street	Source
-	✓	Cole Information Services

N LEXINGTON ST 1992

104	ZIMMER, ZIP
300	MILLER, TRUMAN J
404	FARNSWORTH, JAMES

Target Street	Cross Street	Source
✓	-	Cole Information Services

W MCKISSOCK ST 1992

206	OUTON, EDITH
304	MCCUBBIN, JIMMY R
403	BLACKMON, HARRY
503	DUNCAN, GARY
505	WATSON, DAVID

APPENDIX H

SITE ASSESSOR AND ENVIRONMENTAL PROFESSIONAL RESUMES

Ryan M. Lunt, CHMM
Environmental Scientist

SPECIALTIES

- Targeted Brownfields Assessments
- Site Assessment
- Removal Actions
- Asbestos Abatement and Demolition
- Preparedness and Prevention

EDUCATION

- B.G.S., Environmental Studies, University of Kansas, Lawrence, Kansas, 2006

PROFESSIONAL CERTIFICATIONS

- Certified Hazardous Materials Manager (CHMM)
- Licensed Asbestos Inspector

TRAINING

- 40-Hour HAZWOPER
- 40-Hour Spill Prevention Control and Countermeasure (SPCC) and Facility Response Plan (FRP) Inspector Training
- EPA Basic Inspector Training
- Advanced Hands-On Computer-Aided Management of Emergency Operations (CAMEO)
- Field Screening Technologies
- First Aid and CPR
- EPA Hazard Ranking System training
- Niton XRF Training
- Preliminary Assessment and Site Inspection Training

RELEVANT EXPERIENCE

Mr. Lunt has ten years of experience as an Environmental Scientist with Seagull Environmental Technologies, Inc. (Seagull). While working with Seagull, Mr. Lunt has managed and provided project support for multiple Phase I, II and III for the City of Lincoln, Nebraska, City of Springfield, Missouri, and City of Wichita, Kansas. He has also conducted environmental oversight and air monitoring for asbestos abatement and demolition projects in Kansas City, Missouri, during revitalization of the downtown area. Mr. Lunt has also conducted asbestos inspections for the Nebraska Department of Environmental Quality (NDEQ) and the City of Kansas City, Missouri, and for City of Springfield, Missouri, Targeted Brownfields Assessments. Mr. Lunt has also provided technical support for the Emergency Response Notification System (ERNS) and Continuous Release-Emergency Response Notification System (CR-ERNS) programs, and has also helped maintain the national petroleum facility database. He has also participated in site discovery assessments for cities in North and South Dakota, and assisted with preparation of Hazard Ranking System (HRS) documentation packages under the EPA Region 8 Preparedness and Prevention and Site Assessment (PPSAS) Superfund Technical Assessment and Response Team (START) 8(a) Carve-Out contract.

Targeted Brownfields Assessments. Mr. Lunt participated in various TBAs (including Phase I, Phase II, and Phase III Environmental Site Assessments [ESA] and Brownfields Inventory Assessments) under the Mini-START, City of Springfield, Missouri and private contracts. In 2008, as part of a Phase I, Mr. Lunt provided asbestos and lead-based paint inspections for NDEQ at an abandoned post office building in North Platte, Nebraska, and a vacant hospital in Wahoo, Nebraska. During the inspections, Mr. Lunt documented potential asbestos containing materials, and collected paint chip samples for laboratory analysis of lead. From 2010 to 2011, Mr. Lunt provided project support for multiple task orders for the City of Springfield, Missouri. The task orders included multiple Phase I and II, and the development of the Jordan River Corridor Feasibility study report. In 2010, Mr. Lunt participated in multiple task orders involving Phase I and Phase II ESAs on properties located in downtown Lincoln, Nebraska. The ESAs were completed as part of a redevelopment for a new multi-use arena and downtown entertainment district. In 2011, Mr. Lunt managed and participated in multiple Phase I and Phase II ESAs on separate properties located in and around downtown Wichita, Kansas as part of a Community Action for a Renewed Environment (CARE) grant.

Site Assessments. Mr. Lunt helped conduct pre-Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Screening and Integrated Site Assessments (ISA) at the Central Mining District and Southwest Missouri Lead sites in Missouri. At these sites, Mr. Lunt contacted property owners on a door-to-door basis to obtain permission for screening residential soil for lead and collecting well water samples for lab analysis. Under the EPA Region 8 START (8a) Carve-out contract, Mr. Lunt conducted site discovery efforts for the Cities of Fargo, North Dakota; Pierre, North Dakota; Sioux Falls, South Dakota; and Bismarck, South Dakota. These efforts included gathering, reviewing, and evaluating current and historical property use data for each city. Upon identification of potential sites where previously undocumented releases of hazardous substances could have occurred, Mr. Lunt contacted potentially involved parties or agencies (City of Fargo, EPA, USDA, Natural Resources Conservation Service, etc.) to gather additional pertinent information concerning those sites. Once a site was tentatively identified, Mr. Lunt prepared a Pre-CERCLIS screening form for EPA Region 8 review.

Preparedness and Prevention. Under the EPA Region 8 START (8a) Carve-Out contract, Mr. Lunt performed quality assurance (QA) checks of the ERNS database, conducted Freedom of Information Act (FOIA) and non-FOIA searches, and prepared annual ERNS reports summarizing releases by material, location, and environmental damage. For the CR-ERNS program, Mr. Lunt conducted CR-ERNS notification reviews for 30-day Initial Written Reports, One Year Follow-up Reports, Statistically Significant Increase Reports, and written notifications of change. Mr. Lunt entered facility information and maintained the CR-ERNS national database and EPA Region 8 regional tracking spreadsheet. In addition, Mr. Lunt conducted QA of 150 Facility Response Plans for EPA Region 8 facilities entered in the EPA national oil database. Mr. Lunt also assisted with instruction of a Computer-Aided Management of Emergency Operations (CAMEO) course for firefighters in Missoula, Montana. The course outlined the basic functions and uses of the four CAMEO suites: CAMEO*fm*; CAMEO Chemicals; Mapping Applications for Response, Planning, and Local Operational Task (MARPLOT); and Areal Locations of Hazardous Atmospheres (ALOHA).

EMPLOYMENT HISTORY

Seagull Environmental Technologies, Inc., Overland Park, Kansas, Environmental Scientist: 2006-present.

Kansas Biological Survey: Central Plains Center for BioAssessment (CPCB), Lawrence, Kansas, Lab Assistant: 2005-2006.

United States Forest Service: Aquatic and Riparian Effectiveness Monitoring Program (AREMP), Corvallis, Oregon: May-August 2003 and May-August 2005.

Jonathan DeBruine
Environmental Scientist

EDUCATION

University of Illinois at Urbana-Champaign

Bachelor of Science in Geology with a concentration in Earth and Environmental Sciences

EXPERIENCE

Seagull Environmental Technologies, Inc. | March 2016 – Present

Performed Phase I and Phase II Environmental Site Assessments for the City of Springfield (Missouri) and the Missouri Department of Natural Resources

Black & Veatch | December 2013 – March 2016

Worked on various projects at former manufactured gas plants sites in Iowa, Kansas, Louisiana, and Nebraska; activities included oversight of remedial activities, low-flow groundwater sampling, data management and analysis, and technical report writing

Worked on geotechnical investigations with drilling activities which included monitoring well installations and logged soil and rock cores

Performed Phase I Environmental Site Assessments at several power plant facilities

Seagull Environmental Technologies, Inc. | September 2013 – November 2013

Worked on various projects under the United States Environmental Protection Agency's Region 8 Superfund Technical Assessment and Response Team (START) contract and assisted with sample collection, removal support/contractor oversight activities, assessment of the nature and extent of releases and potential releases of various contaminants, and recorded written documentation of activities

Performed Phase I and Phase II Environmental Site Assessments

Applied GeoScience, Inc. | August 2012 – September 2013

Performed Phase I and Phase II Environmental Site Assessments for various clients in the Chicagoland and greater Midwest area

Tetra Tech | September 2008 - August 2012

Conducted Phase I Environmental Site Assessments for a telecommunications company

Worked on and managed various projects under the United States Environmental Protection Agency's Region 7 Superfund Technical Assessment and Response Team (START) and Resource Conservation and Recovery Act (RCRA) contracts and assisted with sample collection, removal support/contractor

oversight activities, assessment of the nature and extent of releases and potential releases of various contaminants, and recorded written documentation of activities

Collected soil and groundwater samples using Geoprobe direct push technology and logged soil core samples in support of Phase II site investigations at Brownfields sites

Provided field screening and hazardous categorization of unknown substances

Performed site reconnaissance, data evaluation and analysis, and prepared Quality Assurance Project Plans (QAPP), Health and Safety Plans (HASP), and technical reports

Used photo-ionization detectors, X-ray fluorescence analyzers, water quality indicators, and other equipment to assist with on-site activities

Applied GeoScience, Inc. | August 2007 - January 2008 (Semester internship)

Performed field tests of concrete, asphalt, soils, and aggregates

Tested and analzyed laboratory results of concrete cylinders for compressive strength properties

TRAINING/CERTIFICATIONS

40-Hour Hazardous Waste Operations and Emergency Response

Basic Chemistry for Emergency Responders

First-Aid/CPR