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DRAFT

SITE ASSESSMENT REPORT
FOR
ESI ENVIRONMENTAL, INC. SITE ASSESSMENT
INDIANAPOLIS, MARION COUNTY, INDIANA

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Prepared by:

WESTON SOLUTIONS, INC.
20 North Wacker Drive, Suite 1210
Chicago, Illinois 60606

Date Prepared	September 29, 2010
TDD Number	S05-0001-1008-022
Document Control Number	1184-2A-AHYY
Contract Number	EP-S5-06-04
WESTON START Project Manager	Rick Mehl
Telephone Number	312-424-3312
U.S. EPA On-Scene Coordinator	Verneta Simon

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Chicago, Illinois 60606

September 29, 2010

Prepared by: _____ Date: 9/29/10
Trenna Seilheimer
WESTON START Member

Reviewed and Approved by: _____ Date: 9/29/10
Rick Mehl
WESTON START Project Manager

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LIST OF ABBREVIATIONS AND ACRONYMS

B&T	Barnes & Thornburg, LLP
CFR	*Code of Federal Regulations*
City	City of Indianapolis
DAF	Dissolved Air Flotation
DPW	Department of Public Works
ERO	Extended Range Organic
ESI	ESI Environmental, Inc.
ft^2	Square Feet
IDEM	Indiana Department of Environmental Management
MCHD	Marion County Health Department
MCL	Maximum Concentration Limit
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OSC	On-Scene Coordinator
PCB	Polychlorinated Biphenyl
RISC	Risk Integrated System of Closure
RSL	Regional Screening Level
START	Superfund Technical Assessment and Response Team
SVOC	Semivolatile Organic Compound
TDD	Technical Direction Document
TPH	Total Petroleum Hydrocarbon
U.S. EPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WESTON	Weston Solutions, Inc.
WWTP	Wastewater Treatment Plant

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1. INTRODUCTION

The U.S. Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to assist U.S. EPA On-Scene Coordinator (OSC) Verneta Simon in performing a site assessment at the ESI Environmental, Inc. (ESI) site (Site), located in Indianapolis, Marion County, Indiana (Figure 1-1). Under Technical Direction Document (TDD) number S05-0001-1008-022, U.S. EPA requested that WESTON START document current site conditions; obtain photographic documentation; and evaluate the potential for imminent and substantial threats to human health, welfare, and the environment posed by Site-related conditions. On September 1, 2010, WESTON START conducted a site walk under the direction of OSC Verneta Simon. U.S. EPA member Bill Ryczik, Indiana Department of Environmental Management (IDEM) member Harry Atkinson, ESI member Thomas Gawlik, and Barnes & Thornburg, LLP (B&T) member Michael Scanlon were also present during the site walk.

This Site Assessment Report is organized into the following sections:

- **Introduction –** Provides a brief description of the objective and scope of site assessment activities
- **Site Background** – Details the Site description and its known history
- **Site Assessment Activities –** Discusses the site observations made during the site assessment
- **Analytical Results –** Discusses the historical analytical results for samples collected at various residential and commercial properties
- **Threats to Human Health and the Environment –** Identifies Site-related conditions that may warrant a removal action under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
- **Conclusions and Recommendations –** Summarizes the site assessment findings and recommendations for further Site activities as needed

2. SITE BACKGROUND

This section discuses the site description and history.

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2.1 SITE DESCRIPTION

The Site is located at 4910 West 86th Street in Indianapolis, Marion County, Indiana and is situated in a commercial and industrial setting. The approximately 8-acre Site includes a wastewater treatment plant (WWTP) consisting of wastewater processing equipment, a sludge treatment building, a sludge treatment process, an oil dehydration process, and a truck off-loading building (Figure 2-1). The Site is bordered to the north by an industrial property, to the south by West 86th Street with commercial properties beyond, and to the east and west by open land. The coordinates for the Site are latitude 39.912866° North and longitude -86.24213° West.

The Site is a provider of liquid waste management services and a recycler of used oil under 40 Code of Federal Regulations (CFR) Part 279. The primary wastewater processing equipment includes API oil/water separators, dissolved air flotation (DAF) units, oil storage tanks, sand filters, rotary vacuum filters, plate and frame filter press, and oxidation pit. The facility collects, processes, recovers, and disposes of non-hazardous wastewater, a byproduct of industrial and commercial manufacturing plants. The Site has the capability to treat a variety of non-hazardous liquids and accepts bulk, drum, and containerized liquids. All loads received into the facility are treated and processed to separate contaminants. The water collected during this process is discharged separately into the City of Indianapolis (City) sanitary sewer system and the contaminants are further processed into a form that allows proper recycling or disposal. Any oils recovered from the process are shipped off-site for reclamation. The Site was designed such that all storm water falling in the Site is captured in its internal sewer system and is ultimately run through its wastewater processing equipment prior to being discharged into the City sanitary sewer system.

Figure 2-1 and Table 2-1 present the features of the Site. Over forty storage tanks (waste oil, raw water, sulfuric acid, caustics, hydrogen peroxide, and sludge), separators (oil-water), sumps (oil), and air strippers are located on-site and range in size as outlined below:

- One 1,000,000-gallon Oil Storage Tank (“A” on Figure 2-1) currently holds approximately 300,000-gallons of possible PCB containing sludge.
- Two 1,000,000-gallon Raw Water Storage Tanks (“J” on Figure 2-1) currently hold a total of approximately 1,500,000-gallons of material (East Tank contains approximately

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900,000-gallons of sludge and West Tank contains approximately 600,000-gallons of sludge).

- Other storage tanks range in size from 3,000 to 90,000-gallons and contain waste oil, raw water, sulfuric acid, caustics, hydrogen peroxide, and sludge; however, the volume of material stored in each tank contents is unknown.
- Separator Tanks range in size from 3,000 to 30,000-gallons; however, the exact volume total of contents located on-site is unknown at this time
- Sump is 4,000-gallons; however, the volume total of contents located on-site is unknown at this time
- Air strippers range in size from 5,000 to 30,000-gallons; however, the exact volume total of contents located on-site is unknown at this time

2.2 SITE HISTORY

The following sections present the history of the Site.

2.2.1 2007 Release Information

A Spill Report dated August 29, 2007, states that a release from the Site occurred on March 15, 2007, during a heavy rain event. The material spilled was untreated oil and water from the Site that entered the City sanitary sewer system via a by-pass sewer (used for permitted special waste), that had been left open. The amount of material released during this event is unknown; however, according to site personnel, it was less than 500-gallons. Due to the heavy rain event, the City sanitary sewers overflowed at several locations in the northern portion of Indianapolis, which resulted in the deposition of the material and sewerage onto vegetation in residential and commercial areas (Figure 2-2 and Table 2-2). The basement of a residence was also impacted at one location.

Contaminated soil and debris was excavated from 25 residential properties and two golf courses. The affected basement was cleaned and the sump pump and hot water heater were replaced at the request of the homeowner. Subsequent to excavation activities, soil samples were collected from the residential properties using a 900 square foot (ft^2) sampling grid and from the Coffin and Riverside Golf Courses using a 2,500 ft^2 sampling grid. Background samples were also collected at select areas.

Numerous sampling activities were conducted by various agencies from March through June

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2007 (Table 2-3a through 2-3f) in the affected areas. Residential soil samples exceeded the IDEM Risk Integrated System of Closure (RISC) Residential Total Petroleum Hydrocarbon (TPH) Non-Default Closure Levels for extended range organics (ERO) (80 milligram per kilogram [mg/kg]). The residential exceedances ranged from 85 to 2,900 mg/kg. Several residential properties had TPH-ERO exceedances subsequent to two separate excavations. IDEM stated the remaining exceedances could stay in place since the soil may be (a) partially attributable to high background levels and (b) better remediated by natural processes including natural degradation and phytoremediation. All TPH results for the golf courses were below the applicable cleanup objectives. It should be noted that several concentrations of arsenic, mercury, chromium, lead, and various volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) exceeded IDEM RISC Residential/Industrial Soil Default Closure Levels and U.S. EPA Residential/Industrial Soil Regional Screening Levels (RSLs). It is unknown if the exceedances are related to the 2007 release.

Wipe sampling was conducted in the basement of a residence using a 1 ft^2 sampling grid. All results were below the applicable cleanup objectives.

Residential water well sampling was also conducted with all results below the applicable cleanup objectives with the exception of arsenic (0.012 to 0.016 milligram per liter [mg/L]) which exceeded the U.S. EPA Maximum Concentration Limits (MCLs). It is unknown if the exceedances are related to the 2007 release.

A professional landscaper restored the lawns after the properties had been cleared by sampling results. The course operators restored the golf courses.

A total of 6,000 gallons of oil and water was removed from the north storm sewer cistern and transported to the Site for treatment. A total of 5,800 gallons of oil and water was removed from the Coffin Golf Course Lake and transported to the Site for treatment. A total of 1,600 yards of contaminated soil and debris was removed from impacted areas and transported offsite for disposal.

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The north storm sewer cistern discovered by IDEM and Marion County Health Department (MCHD) and initially identified as a potential source of the release was determined to be a non-functioning sewer and was not the source of the oil from the incident. On April 10, 2007, the pipe from the Site to the cistern was plugged and the cistern was filled with concrete to prevent any possible problems with this structure in the future. On April 17, 2007, the by-pass sewer was permanently sealed with concrete.

2.2.2 2007 PCB Containing Oils Information

On July 18, 2007, the Site was notified by a customer that it had discovered approximately 28 mg/kg of polychlorinated biphenyl (PCBs) in a used oil shipment from the Site. The customer returned the shipment to the Site and it was placed in a segregated holding tank. Samples were collected from each of the product storage frac tanks and other process tanks located at the Site and analyzed for PCBs. The Site discovered that detectable PCBs were present in four loads of oily water from one generator/transporter. All equipment was decontaminated with kerosene beginning on August 1, 2007. The recovered kerosene was transferred to the Oil Storage Tank designated “A” on Figure 2-1. In addition to the recovered kerosene, all pumpable materials (liquid and suspended solids) that could be pumped through existing and temporary lines were pumped to this tank. Materials that could not be pumped to this tank were placed in designated frac tanks while recovered centrifuge solids were stored in the Oil Water Separator designated “H” on Figure 2-1. These materials were disposed of off-site in July 2008.

From October 2008 to August 2009, approximately 660,000-gallons from Oil Storage Tank (“A”) were transported off-site for disposal. This tank currently contains approximately 300,000 -gallons of sludge.

2.2.3 2009 Release Information

Reportedly another release occurred in early 2009. The City-Department of Public Works (DPW) collected background, sludge, and soil samples from various residential and commercial properties in February and April 2009 (Figure 2-2 and Tables 2-3a and 2-3b). Residential soil samples exceeded the IDEM RISC Residential TPH Non-Default Closure Levels for ERO (80 mg/kg). The residential exceedances ranged from 230 to 3,800 mg/kg.

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2.2.4 Current Information

In anticipation of the Site being permanently shut down, a Partial Closure Plan was drafted which focuses on managing storm water run-off post shut down to insure that the storm water remains uncontaminated and is properly drained from the Site. The storm water would be directed away from existing process equipment and allowed to flow into "Oil Creek" which runs to the east of the Site. Storm water currently empties into one of the two Raw Water Storage Tanks ("J").

In a press release dated September 27, 2010, ESI announced that it would discontinue accepting waste material and end its operations effective September 28, 2010.

3. SITE ASSESSMENT ACTIVITIES

On September 1, 2010, U.S. EPA OSC Verneta Simon; U.S. EPA member Bill Ryczik, IDEM member Harry Atkinson; ESI member Thomas Gawlik; B&T member Michael Scanlon; and WESTON START member Marcus Muccianti conducted the site walk.

The objective for this site assessment was to determine whether the Site poses an imminent and substantial threat to human health, human welfare, and the environment. No investigative samples were collected during these activities. The site observations are discussed below.

3.1 SITE OBSERVATIONS

Observations during the site assessment are summarized below.

- An asphalt and concrete berm surrounds the entire Site. A secure fence is also present along the perimeter of the Site.
- The 1,000,000-gallon Oil Storage Tank ("A" on Figure 2-1) currently holds approximately 300,000-gallons of possible PCB containing sludge.
- The two 1,000,000-gallon Raw Water Storage Tanks ("J" on Figure 2-1) currently hold a total of approximately 1,500,000-gallons of material (East Tank contains approximately 900,000-gallons and West Tank contains approximately 600,000-gallons).
- All storage tanks onsite seem to have secondary containment; however, a complete assessment of the storage tanks, separators, sumps, strippers, and buildings was not completed during this site assessment.

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Appendix A provides photographic documentation of Site observations.

4. ANALYTICAL RESULTS

As stated above, numerous sampling activities were conducted by various agencies from March 2007 to April 2009 (Tables 2-3a through 2-3f) in response to the releases in 2007 and 2009. IDEM stated the remaining residential soil exceedances could stay in place since the soil may be (a) partially attributable to high background levels and (b) better remediated by natural processes including natural degradation and phytoremediation. During sampling events in 2007, several concentrations of arsenic, mercury, chromium, lead, and various VOCs and SVOCs exceeded IDEM RISC Residential/Industrial Soil Default Closure Levels and U.S. EPA Residential/Industrial Soil RSLs. It is unknown if the exceedances are related to the 2007 release.

On March 22, 2007, eight residential properties were sampled and analyzed. Four of the eight residences had exceedances of the U.S. EPA MCLs for arsenic. It is unknown if the exceedances are related to the 2007 release.

On September 1, 2010, U.S. EPA, IDEM, ESI, B&T, and WESTON START conducted a site walk. No investigative samples were collected during these activities.

5. THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

Factors to be considered in determining the appropriateness of a potential removal action at a Site are delineated in the NCP at Title 40 of the CFR 300.415(b)(2). A summary of the factors applicable to this Site is presented below.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances, pollutants, or contaminants**

  On March 15, 2007, a release from the Site occurred during a heavy rain event. The release was untreated oil and water from the Site that entered the City sanitary sewer system via a by-pass sewer (used for permitted special waste), that had been left open. Twenty-five residential properties and two golf courses were affected by this incident.

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Reportedly another release occurred in the beginning of 2009. Sludge and soil samples were collected from eight residential properties and one golf course.

Two releases (2007 and 2009) have occurred at the Site resulting in residential property contamination of soils with TPH-ERO exceeding the IDEM RISC Residential TPH Non-Default Closure Levels.

- **Actual or potential contamination of drinking water supplies or sensitive ecosystems**

  Subsequent to the 2007 release, of the 25 residential properties affected, 10 of them have a drinking water well present. On March 22, 2007, eight residential properties were sampled and analyzed. Four of the eight residences had exceedances of the U.S. EPA MCLs for arsenic (concentrations ranged from 0.012 to 0.016 mg/L).

  There is no data for residential water well sampling subsequent to the 2009 release.

- **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release**

  Over forty storage tanks (waste oil, raw water, sulfuric acid, caustics, hydrogen peroxide, and sludge), separators (oil-water), sumps (oil), and air strippers are located on-site and range in size from 3,000 to 1,000,000-gallons.

  Two releases (2007 and 2009) have occurred at the Site resulting in residential property contamination of soils with TPH-ERO exceeding the IDEM RISC Residential TPH Non-Default Closure Levels.

- **Weather conditions that may cause hazardous substances, pollutants, or contaminants to migrate or be released**

  A release from the Site occurred on March 15, 2007, during a heavy rain event. The release was untreated oil and water from the Site that entered the City sanitary sewer system via a by-pass sewer (used for permitted special waste), that had been left open. Due to the heavy rain event, the City sanitary sewers overflowed at several locations in the northern portion of Indianapolis, which resulted in the deposition of the material and sewerage onto vegetation in residential and commercial areas.

  Reportedly another release occurred in the beginning of 2009. Based on the additional release subsequent to the permanent closure of the north storm sewer cistern and by-pass sewer on-site, it is unknown how the material from the Site appeared in the City sanitary sewer system and was released in the above mentioned areas.

  These two releases (2007 and 2009) have occurred at the Site resulting in residential property contamination of soils with TPH-ERO exceeding the IDEM RISC Residential TPH Non-Default Closure Levels.

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6. CONCLUSIONS AND RECOMMENDATIONS

This section discusses the conclusions and recommendations based on the site assessment findings.

6.1 CONCLUSIONS

On September 1, 2010, U.S. EPA, IDEM, ESI, B&T, and WESTON START conducted a site walk. The objective for this site assessment was to determine whether the Site poses an imminent and substantial threat to human health, human welfare, and the environment. No investigative samples were collected during these activities. Based on the site walk, the following observations were made:

- The 1,000,000-gallon Oil Storage Tank ("A" on Figure 2-1) currently holds approximately 300,000-gallons of possible PCB containing sludge.
- The two 1,000,000-gallon Raw Water Storage Tanks ("J" on Figure 2-1) currently hold a total of approximately 1,500,000-gallons of material (East Tank contains approximately 900,000-gallons of sludge and West Tank contains approximately 600,000-gallons of sludge).
- Storm water currently empties into one of the two 1,000,000-gallon Raw Water Storage Tanks ("J") and then discharges into the sanitary sewer.
- Other storage tanks range in size from 3,000 to 90,000-gallons and contain waste oil, raw water, sulfuric acid, caustics, hydrogen peroxide, and sludge; however, the volume of material stored in each tank contents is unknown.

A release from the Site occurred on March 15, 2007, during a heavy rain event. The release was untreated oil and water from the Site that entered the City sanitary sewer system via a by-pass sewer (used for permitted special waste), that had been left open. Due to the heavy rain event, the City sanitary sewers overflowed at several locations in the northern portion of Indianapolis, which resulted in the deposition of the material and sewerage onto vegetation in residential and commercial areas. Twenty-five residential properties and two golf courses were affected by this incident. On April 10, 2007, the pipe from the Site to the north storm sewer cistern was plugged and the cistern was filled with concrete to prevent any possible problems with this structure in the future. On April 17, 2007, the by-pass sewer was permanently sealed with concrete.

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Reportedly another release occurred in the beginning of 2009. Eight residential properties and one golf course had sludge and soil samples collected.

These two releases (2007 and 2009) have occurred at the Site resulting in residential property contamination of soils with TPH-ERO exceeding the IDEM RISC Residential TPH Non-Default Closure Levels.

In a press release dated September 27, 2010, ESI announced that it would discontinue accepting waste material and end its operations effective September 28, 2010.

Contaminants and conditions at the Site meet criteria established in the NCP for a removal action.

6.2 RECOMMENDATIONS

Based on information gathered during the site assessment, WESTON START recommendations are summarized below.

- A removal of wastes at the ESI site should be conducted to reduce the potential for a release of contaminated materials that could result in, but not limited to, any or all of the following:
    - Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances, pollutants, or contaminants;
    - Actual or potential contamination of drinking water supplies or sensitive ecosystems;
    - Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release; and
    - Weather conditions that may cause hazardous substances, pollutants, or contaminants to migrate or be released.
- In anticipation of the Site being permanently shut down, a Closure Plan should be implemented to manage storm water run-off post and insure that the storm water remains uncontaminated and is properly drained from the Site. Storm water currently empties into one of the two 1,000,000-gallon Raw Water Storage Tanks (“J”).

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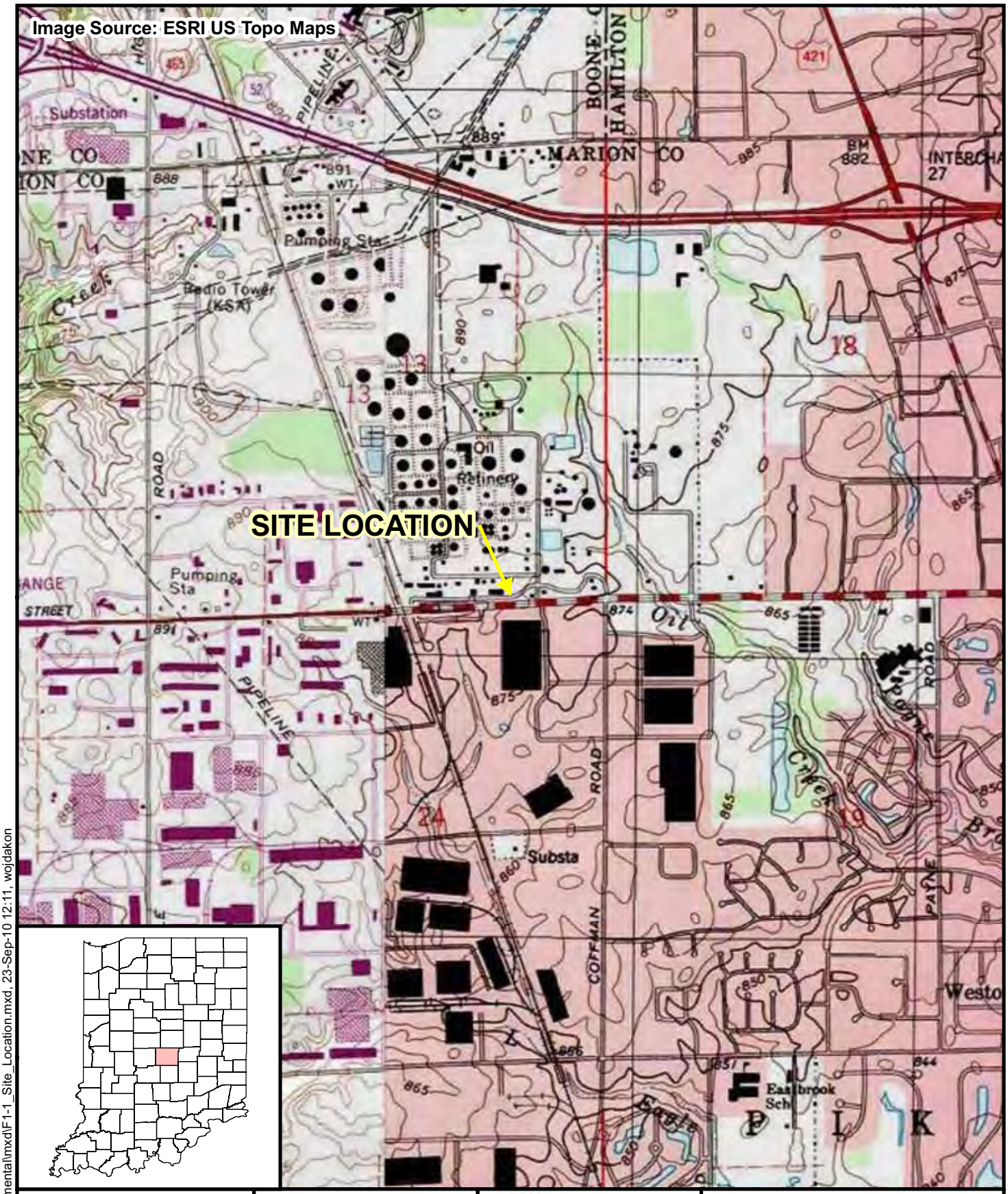
FIGURES



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0 2,000 Feet

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Prepared for:
U.S. EPA REGION V

Contract No.: EP-S5-06-04
TDD: S05-0001-1008-022
DCN: 1184-2A-AHYY

Prepared By:
WESTON SOLUTIONS, INC

750 E. Bunker Court
Suite 500
Vernon Hills, Illinois 60061

Figure 1-1
Site Location Map
ESI Environmental, Inc.
Indianapolis, Marion County, Indiana

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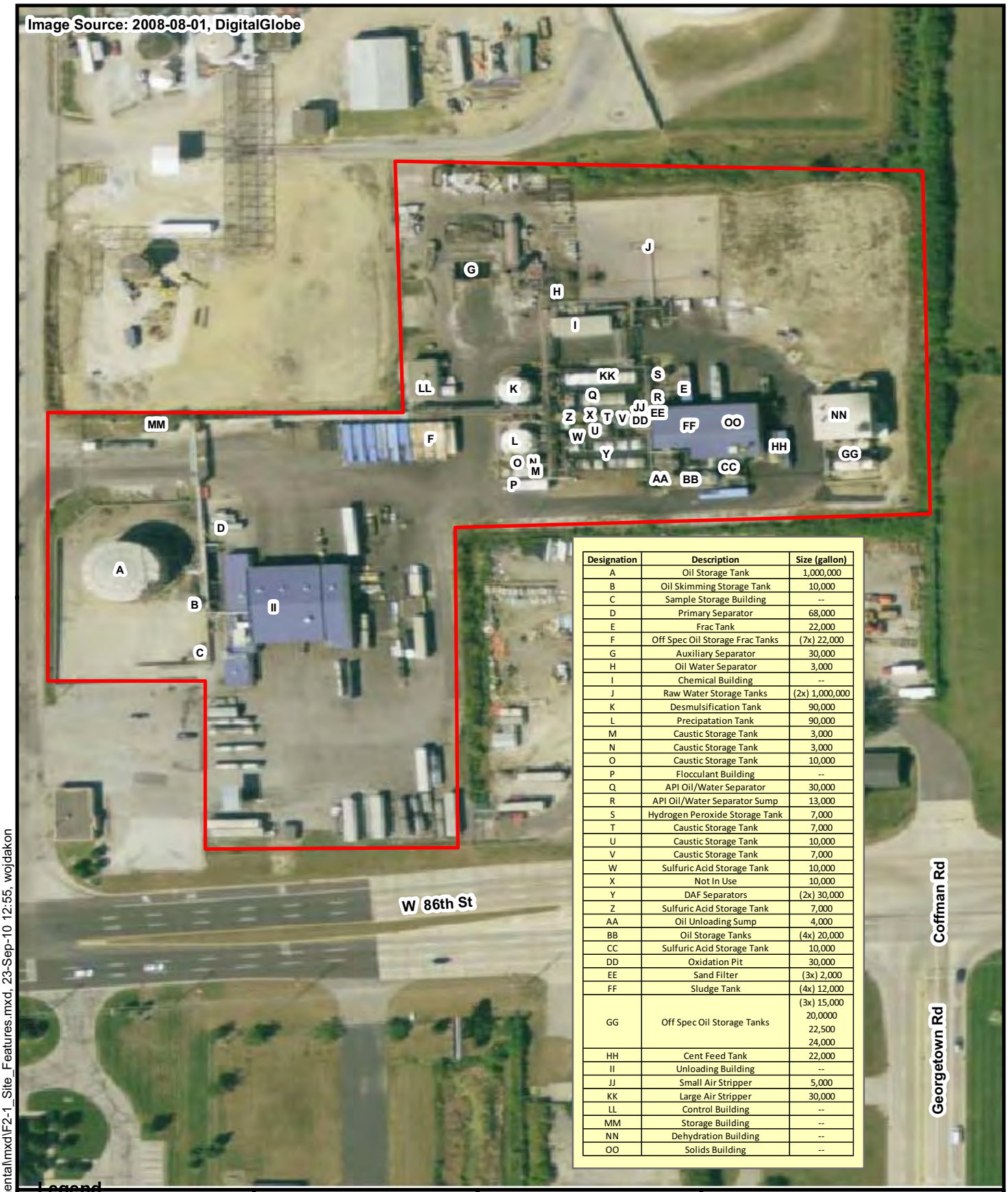

Designation	Description	Size (gallon)
A	Oil Storage Tank	1,000,000
B	Oil Skimming Storage Tank	10,000
C	Sample Storage Building	--
D	Primary Separator	68,000
E	Frac Tank	22,000
F	Off Spec Oil Storage Frac Tanks	(7x) 22,000
G	Auxiliary Separator	30,000
H	Oil Water Separator	3,000
I	Chemical Building	--
J	Raw Water Storage Tanks	(2x) 1,000,000
K	Desmulsification Tank	90,000
L	Precipatation Tank	90,000
M	Caustic Storage Tank	3,000
N	Caustic Storage Tank	3,000
O	Caustic Storage Tank	10,000
P	Flocculant Building	--
Q	API Oil/Water Separator	30,000
R	API Oil/Water Separator Sump	13,000
S	Hydrogen Peroxide Storage Tank	7,000
T	Caustic Storage Tank	7,000
U	Caustic Storage Tank	10,000
V	Caustic Storage Tank	7,000
W	Sulfuric Acid Storage Tank	10,000
X	Not In Use	10,000
Y	DAF Separators	(2x) 30,000
Z	Sulfuric Acid Storage Tank	7,000
AA	Oil Unloading Sump	4,000
BB	Oil Storage Tanks	(4x) 20,000
CC	Sulfuric Acid Storage Tank	10,000
DD	Oxidation Pit	30,000
EE	Sand Filter	(3x) 2,000
FF	Sludge Tank	(4x) 12,000
GG	Off Spec Oil Storage Tanks	(3x) 15,000 20,0000 22,500 24,000
HH	Cent Feed Tank	22,000
II	Unloading Building	--
JJ	Small Air Stripper	5,000
KK	Large Air Stripper	30,000
LL	Control Building	--
MM	Storage Building	--
NN	Dehydration Building	--
OO	Solids Building	--

Legend

Detailed Streets

Site Boundary

0 150 Feet

N

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DCN: 1184-2A-AHYY

Prepared By:
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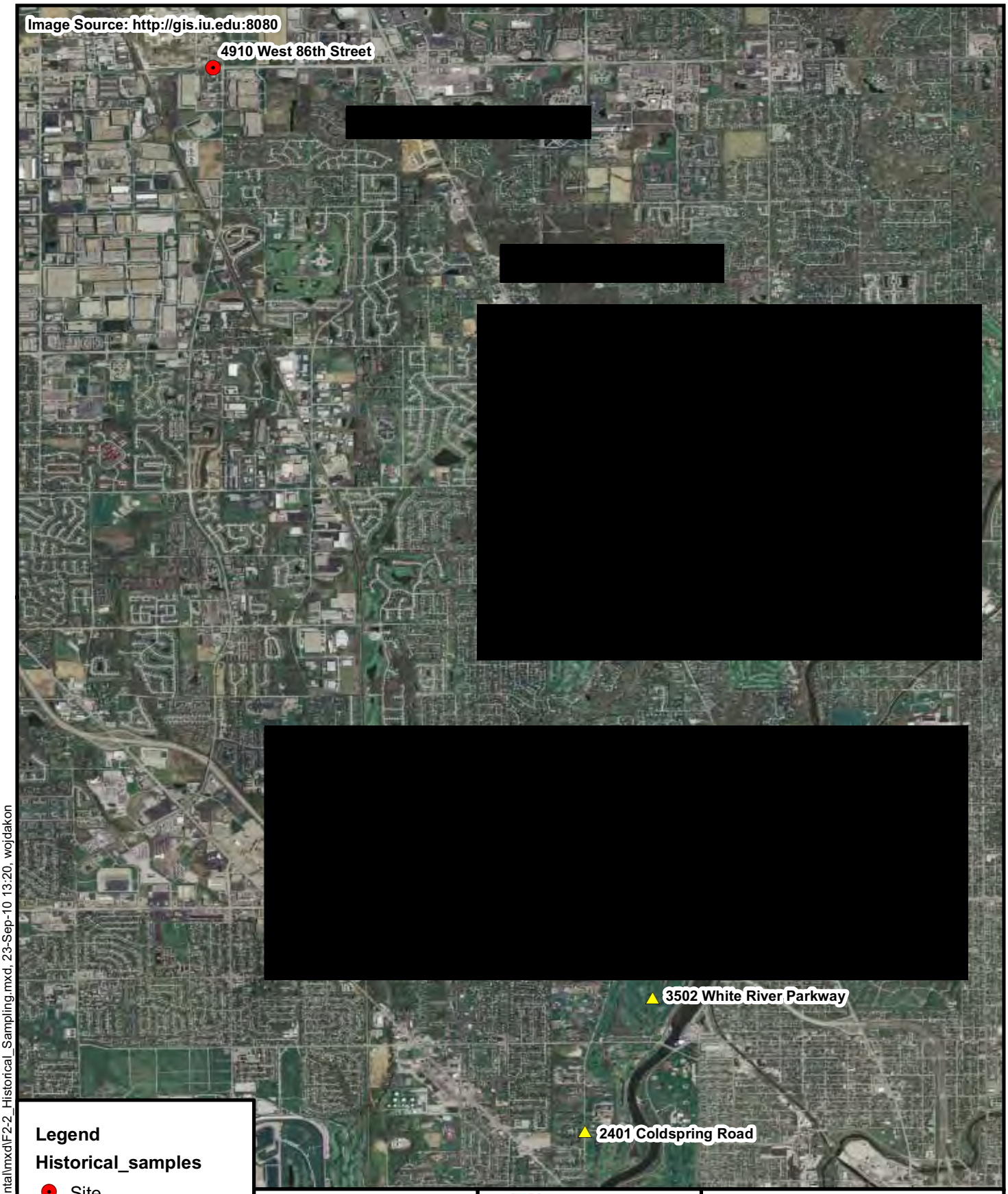
750 E. Bunker Court
Suite 500
Vernon Hills, Illinois 60061

Figure 2-1
Site Features Map
ESI Environmental, Inc.
Indianapolis, Marion County, Indiana

File: D:\ESI_Environmental\mxd\F2-1_Site_Features.mxd, 23-Sep-10 12:55, wojdakon



Legend

Historical_samples

- Site
- Commercial
- Residential

0 5,000 Feet

N

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Figure 2-2
Historical Sampling Events
Location Map
ESI Environmental, Inc.
Indianapolis, Marion County, Indiana

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TABLES

Table 2-1
Site Features Designations
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, IN

Designation	Description	Size (gallon)
A	Oil Storage Tank	1,000,000
B	Oil Skimming Storage Tank	10,000
C	Sample Storage Building	--
D	Primary Separator	68,000
E	Frac Tank	22,000
F	Off Spec Oil Storage Frac Tanks	(7x) 22,000
G	Auxiliary Separator	30,000
H	Oil Water Separator	3,000
I	Chemical Building	--
J	Raw Water Storage Tanks	(2x) 1,000,000
K	Desmulsification Tank	90,000
L	Precipatation Tank	90,000
M	Caustic Storage Tank	3,000
N	Caustic Storage Tank	3,000
O	Caustic Storage Tank	10,000
P	Flocculant Building	--
Q	API Oil/Water Separator	30,000
R	API Oil/Water Separator Sump	13,000
S	Hydrogen Peroxide Storage Tank	7,000
T	Caustic Storage Tank	7,000
U	Caustic Storage Tank	10,000
V	Caustic Storage Tank	7,000
W	Sulfuric Acid Storage Tank	10,000
X	Not In Use	10,000
Y	DAF Separators	(2x) 30,000
Z	Sulfuric Acid Storage Tank	7,000
AA	Oil Unloading Sump	4,000
BB	Oil Storage Tanks	(4x) 20,000
CC	Sulfuric Acid Storage Tank	10,000
DD	Oxidation Pit	30,000
EE	Sand Filter	(3x) 2,000
FF	Sludge Tank	(4x) 12,000
GG	Off Spec Oil Storage Tanks	(3x) 15,000 20,0000 22,500 24,000
HH	Cent Feed Tank	22,000
II	Unloading Building	--
JJ	Small Air Stripper	5,000
KK	Large Air Stripper	30,000
LL	Control Building	--
MM	Storage Building	--
NN	Dehydration Building	--
OO	Solids Building	--

Notes:
Refer to Figure 2-1 for designation locations on-site

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Table 2-2
2007 Spill Affected Areas
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Designation	Address	Water Well Present (Y/N)	Affected Area
Site	4910 West 86th Street, Indianapolis, IN	N	
Residential	[redacted]	N	basement floor drain back-up and flooded with sewage/oil
Residential	[redacted]	Y	manhole overflowed in side yard
Residential	[redacted]	N	manhole overflowed in front yard
Residential	[redacted]	N	manhole overflowed in front yard
Residential	[redacted]	N	manhole overflowed in front yard
Residential	[redacted]	N	manhole overflowed in front yard
Residential	[redacted]	N	manhole overflowed in front yard
Residential	[redacted]	Y	manhole overflowed in front yard
Residential	[redacted]	N	manhole overflowed in back yard
Residential	[redacted]	N	manhole overflowed in back yard
Residential	[redacted]	N	manhole overflowed along Grandview Drive
Residential	[redacted]	N	manhole overflowed along Grandview Drive
Residential	[redacted]	N	manhole overflowed in neighboring properties
Residential	[redacted]	N	manhole overflowed along Grandview Drive
Residential	[redacted]	Y	manhole overflowed in back yard
Residential	[redacted]	N	manhole overflowed in back yard
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	Y	manholes overflowed in Springwood Trail roadbed
Residential	[redacted]	N	manhole overflowed in back yard of neighboring property
Residential	[redacted]	N	manhole overflowed in back yard of neighboring property
Residential	[redacted]	N	manhole overflowed in back yard
Public	Manhole #930137	N	manhole overflowed in undeveloped woodland area
Public	Manhole #930009	N	manhole overflowed in undeveloped woodland area
Public	Manhole #930032	N	manhole overflowed in undeveloped woodland area
Public	Manhole #930033	N	manhole overflowed in undeveloped woodland area
Public	Manhole #930036	N	manhole overflowed in undeveloped woodland area
Commercial	Coffin Golf Course 2401 Coldspring Road, Indianapolis, IN	N	manhole overflowed in area of 11th Hole
Commercial	Riverside Golf Course 3502 White River Parkway, Indianapolis, IN	N	manhole overflowed in area of 5th, 6th, 10th, and 13th Holes and small pond

Notes:
Refer to Figure 2-2 for designation locations on-site

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Table 2-3a
Summary of Historical Sampling Events
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample Date	Sampled By	Sample Area	Sample Type	Analyses					
				TPH[1]	VOC	SVOC	PCB	Metals	TCLP[2]
3/16/2007	IDEM	Unknown	Solid (soil)	✓	✓	✓		✓	
			Liquid (sewer)	✓ (no DRO)					
			Liquid (creek)	✓					
			Liquid (other)						
			Sludge (oil)	✓ (no DRO)		✓		✓	
3/16/2007	MCHD	Various Residential	Solid (soil)		✓			✓	
		ESI							
3/19/2007	ESI	ESI	Solid (soil)						✓ (no SVOC)
3/21/2007	City-DPW	Commercial (golf courses)	Solid (soil, bg)	✓				✓	✓
			Liquid (pond)		✓	✓			
3/22/2007	ESI	Various Residential	Liquid (water wells)		✓	✓	✓	✓	
3/26/2007	City-DPW	ESI-Storm Inlet	Sludge (oil)	✓				✓	✓
4/2007-5/2007	Keramida	Various Residential	Solid (soil, bg)	✓ (no DRO)	✓ (only PCE)				
		Commercial (golf courses)							
6/7/2007	Keramida	Residential	Wipe	✓	✓				
11/19/2008	City-DPW	Various Residential	Solid (soil, bg)	✓ (no DRO)					
			Solid (manhole)						
2/12/2009	City-DPW	Commercial (golf course)	Solid (soil, bg)	✓ (only ERO)					
		Various Residential							
4/7/2009	City-DPW	Various Residential	Solid (soil)	✓ (no DRO)					
			Solid (soil, bg)				✓		

Notes:

[1]-TPH includes DRO, GRO, ERO

[2]-TCLP includes VOCs, SVOCs, Metals

bg – background
City – City of Indianapolis
DPW – Department of Public Works
DRO - Diesel Range Organic
ERO - Extended Range Organic
ESI – ESI Environmental, Inc.
GRO - Gasoline Range Organic
IDEM – Indiana Department of Environmental Management
Keramida – Keramida Environmental
MCHD – Marion County Health Department
PCB – Polychlorinated Biphenyl
PCE - Tetrachloroethane
SVOC – Semivolatile Organic Compound
TCLP – Toxicity Characteristic Leaching Procedure
TPH – Total Petroleum Hydrocarbon
VOC – Volatile Organic Compound

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Table 2-3b
City of Indianapolis-DPW Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	PCBs (mg/kg)	Total Metals (mg/kg)								TCLP (mg/L)									
								As	Ba	Cd	Cr	Pb	Se	Ag	Hg	VOCs (µg/L)	SVOCs (µg/L)	As	Ba	Cd	Cr	Pb	Se	Ag	Hg (µg/L)
[redacted]																									
Sludge	02/12/09	--	*3,000,000*	*67,000*	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Background		--	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	780	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[redacted]																									
1	04/18/07	BDL	1,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2		BDL	2,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3		BDL	1,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4		BDL	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Background	11/19/08	BDL	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	78	--	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Sludge	02/12/09	--	*340,000*	*130,000*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Background		--	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	8.9	--	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Background	04/07/09	0.36	400	--	--	--	BRL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		0.11	1,100	--	--	--	BRL	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
[redacted]																									
Sludge	02/12/09	--	*390,000*	*96,000*	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Background		--	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	3,100	--	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
[redacted]																									
Background	04/07/09	0.11	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		0.84	1,600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[redacted]																									
1	04/07/09	9.1	3,800	--	--	--	--	--	--	--	--	--	--	--	--	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
[redacted]																									
Sludge	02/12/09	--	*450,000*	*82,000*	--	--	BRL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Background		--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	230	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Riverside Golf Course																									
Background	03/21/07	BRL	20	BRL	--	--	--	6.04	96.9	BRL	12.6	21.0	BRL	BRL	BRL	BRL	BRL	BRL	0.392	BRL	BRL	BRL	BRL	BRL	BRL
1		BRL	210	BRL	--	--	--	5.84	89.2	BRL	13.4	24.1	BRL	BRL	183	BRL	BRL	BRL	0.297	BRL	BRL	BRL	BRL	BRL	BRL
Coffin Golf Course																									
Background	03/21/07	BRL	37	BRL	--	--	--	4.63	58.9	BRL	7.1	37.2	BRL	BRL	246	BRL	BRL	BRL	0.588	BRL	BRL	BRL	BRL	BRL	BRL
1		BRL	26	BRL	--	--	--	4.97	61.8	BRL	8.38	18.5	BRL	BRL	1120	BRL	BRL	BRL	0.713	BRL	BRL	BRL	BRL	BRL	BRL
2		BRL	BRL	BRL	--	--	--	3.3	66.1	BRL	7.56	14.6	BRL	BRL	54	BRL	BRL	BRL	0.701	BRL	BRL	BRL	BRL	BRL	BRL
Pond		BRL	BRL	7	BRL	BRL	--	0.062	1.74	BRL	0.145	0.195	BRL	BRL	1.03	--	--	--	--	--	--	--	--	--	--
Background	02/12/09	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ESI - 4910 West 86th Street, Indianapolis, IN																									
Storm Inlet	03/26/07	190	*62,000*	*2,200*	--	--	--	1.08	43.9	0.367	16.3	17	BRL	BRL	BRL	70* (benzene)	140* (cresols)	BRL	0.322	BRL	BRL	BRL	BRL	BRL	BRL

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Table 2-3b
City of Indianapolis-DPW Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	PCBs (mg/kg)	Total Metals (mg/kg)								TCLP (mg/L)									
								As	Ba	Cd	Cr	Pb	Se	Ag	Hg	VOCs (µg/L)	SVOCs (µg/L)	As	Ba	Cd	Cr	Pb	Se	Ag	Hg (µg/L)
[redacted]																									
Sludge	02/12/09	--	*410,000*	*120,000*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Background		--	73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1	04/07/09	1.1	410	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
[redacted]																									
1	04/07/09	0.14	75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
Exceeds IDEM RISC Residential Soil Default Closure Levels
Exceeds IDEM RISC Industrial Soil Default Closure Levels
Exceeds IDEM RISC TPH Residential Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds IDEM RISC TPH Industrial Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds U.S. EPA Residential Soil Regional Screening Levels
Exceeds U.S. EPA Industrial Soil Regional Screening Levels
* - all other constituents BRL
"--" - not analyzed
mg/kg - millgram per kilogram
mg/L - milligram per liter
µg/L - microgram per liter
Ag - silver
As - arsenic
Ba - barium
BDL - below detection limit
BRL - below reporting limit
Cd - cadmium
Cr - chromium
DRO - diesel range organic
ERO - extended range organic
GRO - gasoline range organic
Hg - mercury
ID - identification
Pb - lead
PCB - polychlorinated biphynels
Se - selenium
SVOC - semivolatile organic compound
TCLP - toxicity characteristic leaching procedure
TPH - total petroleum hydrocarbon
VOC - volatile organic compound

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Table 2-3c
IDEM Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	Non-Halogenated Organics** (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	Total Metals (mg/kg)							
							As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Soil (LQ4137)	03/16/07	BDL	82000	*220000*	*0.49 (Eth) 1.5 (Sty) 2.7 (Xyl) 1.8 (Naph)	BDL	3.4	160	0.2	47	64	0.41	1.1	0.21
Soil (LQ4138)	03/17/07	220	370000	*800000*	*5.1 (Ace) 2.1 (2-But) 3.6 (Eth) 12 (Sty) 0.56 (PCE) 4.9 (Tol) 18 (Xyl) 0.92 (Iso) 4.9 (Naph)	BDL	3	410	0.98	150	130	0.33	3.4	0.54
Soil (LQ4139)	03/17/07	740	240000	NA	*2.7 (MIK) 5.5 (Ace) 7.4 (Ben) 1.1 (2-But) 0.45 (Chloro) 22 (Eth) 1 (Met) 1.4 (Sty) 1.7 (PCE) 89 (Tol) 0.62 (TCE) 100 (Xyl) 1.6 (Iso) 8.4 (Naph)	*440 (2-Met) 300 (Bis)	2.5	230	1.6	65	78	0.46	1.8	0.21

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Table 2-3c
IDEM Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	Non-Halogenated Organics* (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	Total Metals (mg/kg)							
							As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Soil (LQ4140)	03/17/07	370	330000	*800000*	*0.74 (Ben) 1.1 (2-But) 8.2 (Eth) 48 (Sty) 1.2 (PCE) 14 (Tol) 37 (Xyl) 1.4 (Iso) 9 (Naph)	BDL	2.9	350	0.61	160	130	0.37	3.8	0.79
Soil (LQ4141)	03/18/07	370	380000	*880000*	*0.85 (Ben) 1.3 (2-But) 7.9 (Eth) 13 (Sty) 1.8 (PCE) 14 (Tol) 38 (Xyl) 1.6 (Iso) 13 (Naph)	BDL	3.9	410	0.87	130	110	0.43	2.5	0.44
Liquid-Sewer (LQ4142)	03/17/07	3400	450000	BDL	*19 (Ben) 0.8 (Chlorob) 0.86 (Chloro) 1.6 (Cis-1,2-DCE) 71 (Eth) 6.8 (Sty) 15 (PCE) 180 (Tol) 6 (TCE) 310 (Xyl) 15 (Iso) 67 (Naph)	*530 (2-Met) 320 (Bis) 160 (Phen)	0.66	25	0.23	10	22	0.2	BDL	BDL
Sludge-Oil (LQ4145)	03/17/07	BDL	*1300000*	BDL	BDL	BDL	BDL	5.3	BDL	0.14	BDL	BDL	BDL	BDL

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Table 2-3c
IDEM Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	TPH-GRO (mg/L)	TPH-ERO (mg/L)	Non-Halogenated Organics** (mg/L)	VOCs (mg/L)	SVOCs (mg/L)	Total Metals (mg/L)							
							As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Liquid-Creek (LQ4143)	03/19/07	BDL	2	5.1	BDL	BDL	BDL	0.059	BDL	BDL	0.008	BDL	BDL	BDL
Liquid-Other (LQ4144)	03/20/07	NA	NA	NA	BDL	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Exceeds IDEM RISC Residential Soil Default Closure Levels
Exceeds IDEM RISC Industrial Soil Default Closure Levels
Exceeds IDEM RISC TPH Residential Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds IDEM RISC TPH Industrial Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds U.S. EPA Residential Soil Regional Screening Levels
Exceeds U.S. EPA Industrial Soil Regional Screening Levels
* - all other constituents BDL
** - client provided material
mg/kg - millgram per kilogram
mg/L - milligram per liter
2-But - 2-butanone
1-Met - 2-methylnaphthalene
Ace - acetone
Ag - silver
As - arsenic
Ba - barium
Ben - benzene
BDL - below detection limit
Bis - bis(2-ethylhexyl)phlatate
Cd - cadmium
Chloro - chloroform
Chlorob - Chlorobenzene
Cis-1,2-DCE - cis-1,2-dichloroethene
Cr - chromium
ERO - extended range organic
Eth - ethylbenzene
GRO - gasoline range organic
Hg - mercury
ID - identification
Iso - isopropylbenzene
Met - methylene chloride
MIK - methyl isobutyl ketone
NA - not analyzed
Naph - naphthalene
Pb - lead
PCE - tetrachloroethane
Phen - phenanthrene
Se - selenium
Sty - styrene
SVOC - semivolatile organic compound
TCE - trichloroethene
Tol - toluene
TPH - total petroleum hydrocarbon
VOC - volatile organic compound
Xyl - xylene

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Table 2-3d
MCHD Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	VOC (mg/kg)	Total Metals (mg/kg)									
			As	Ba	Cd	Cr	Pb	Cu	Ni	Fe (µg/L)	Zn	Hg
[redacted]												
1	03/16/07	BDL	4.0	345	1.1	65.9	96.7	690	60.1	13400	559	0.95
[redacted]												
1	03/16/07	BDL	7.5	745	1.9	141	124	1190	107	NA	1020	1.6
ESI - 4910 West 86th Street, Indianapolis, IN												
1	03/16/07	*321 (toluene) 222 (xylene)	2.4	43.6	0.52	17.9	36.6	139	27.3	NA	152	0.17
[redacted]												
1	03/16/07	BDL	4.3	358	1.0	70.5	112	861	66.8	NA	615	1.2
[redacted]												
1	03/16/07	BDL	4.3	407	1.2	80.6	112	783	69.0	NA	604	1.2

Notes:
Exceeds IDEM RISC Residential Soil Default Closure Levels
Exceeds IDEM RISC Industrial Soil Default Closure Levels
Exceeds IDEM RISC TPH Residential Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds IDEM RISC TPH Industrial Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds U.S. EPA Residential Soil Regional Screening Levels
Exceeds U.S. EPA Industrial Soil Regional Screening Levels

* - all other constituents BDL
mg/kg - millgram per kilogram
µg/L - microgram per liter
As - arsenic
Ba - barium
BDL - below detection limit
Cd - cadmium
Cr - chromium
Cu - copper
Fe - iron
Hg - mercury
ID - identification
Ni - nickel
Pb - lead
VOC - volatile organic compound
Zn - zinc

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Table 2-3e
ESI Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date	VOC (µg/L)	SVOC (µg/L)	PCB (µg/L)	Total Metals (mg/L)								TCLP (ppm)								
					As	Ba	Cd	Cr	Pb	Se	Ag	Hg	VOC	As	Ba	Cd	Cr	Pb	Se	Ag	Hg
Soil Scrapings	03/19/07	--	--	--	--	--	--	--	--	--	--	--	BDL	BDL	3.23	BDL	BDL	BDL	BDL	BDL	BDL
[redacted]																					
1	03/22/07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	BDL	0.23	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	0.014	0.18	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	0.012	0.26	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	0.014	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	0.016	0.3	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--
[redacted]																					
1	03/22/07	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--	--	--

Notes:
Exceeds U.S. EPA Maximum Contaminant Levels
"--" - not analyzed
mg/L - milligram per liter
µg/L - microgram per liter
Ag - silver
As - arsenic
Ba - barium
BDL - below detection limit
Cd - cadmium
Cr - chromium
Hg - mercury
ID - identification
Pb - lead
PCB - polychlorinated biphynels
ppm - part per million
Se - selenium
SVOC - semivolatile organic compound
TCLP - toxicity characteristic leaching procedure
VOC - volatile organic compound

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Table 2-3f
Keramida Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date 1	PCE (µg/kg)	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	BTEX (mg)	Sample Date 2	TPH-ERO (mg/kg)
[redacted]								
1	04/17/07	BDL	16	800	NA	NA	05/21/07	420
2	04/17/07	BDL	BDL	730	NA	NA	05/21/07	230
3	04/17/07	BDL	BDL	430	NA	NA	NA	
4	04/17/07	BDL	BDL	650	NA	NA	05/21/07	420
5	04/17/07	BDL	BDL	280	NA	NA	NA	
6	04/17/07	BDL	BDL	340	NA	NA	NA	
[redacted]								
1	04/18/07	BDL	BDL	610	NA	NA	NA	
2	04/18/07	BDL	BDL	1200	NA	NA	05/18/07	210
[redacted]								
1	04/18/07	BDL	BDL	440	NA	NA	05/18/07	250
2	04/18/07	BDL	BDL	200	NA	NA	NA	
[redacted]								
1	04/18/07	BDL	BDL	460	NA	NA	NA	
2	04/18/07	BDL	BDL	980	NA	NA	05/18/07	180
[redacted]								
1	04/18/07	BDL	BDL	2300	NA	NA	NA	
2	04/18/07	BDL	BDL	2200	NA	NA	05/18/07	110
[redacted]								
1	04/18/07	BDL	BDL	1300	NA	NA	NA	
2	04/18/07	BDL	BDL	2900	NA	NA	05/18/07	160
3	04/18/07	BDL	BDL	1200	NA	NA	NA	
4	04/18/07	BDL	BDL	500	NA	NA	NA	
[redacted]								
1	04/17/07	BDL	BDL	100	NA	NA	NA	
2	04/17/07	BDL	BDL	86	NA	NA	05/21/07	39
3	04/17/07	BDL	BDL	120	NA	NA	NA	
4	04/17/07	BDL	BDL	190	NA	NA	NA	
5	04/17/07	BDL	BDL	460	NA	NA	NA	
[redacted]								
Background	05/08/07	NA	NA	49	NA	NA	NA	
[redacted]								
1	04/19/07	BDL	BDL	190	NA	NA	NA	
2	04/19/07	BDL	BDL	88	NA	NA	NA	
[redacted]								
Background	05/08/07	NA	NA	140	NA	NA	NA	
[redacted]								
1	04/19/07	BDL	BDL	340	NA	NA	NA	

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Table 2-3f
Keramida Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date 1	PCE (µg/kg)	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	BTEX (mg)	Sample Date 2	TPH-ERO (mg/kg)
[redacted]								
1	04/18/07	BDL	BDL	160	NA	NA	NA	
2	04/18/07	BDL	BDL	85	NA	NA	NA	
3	04/18/07	BDL	BDL	220	NA	NA	NA	
4	04/18/07	BDL	BDL	120	NA	NA	NA	
5	04/18/07	BDL	BDL	210	NA	NA	NA	
6	04/18/07	BDL	BDL	420	NA	NA	NA	
7	04/18/07	BDL	BDL	350	NA	NA	NA	
8	04/18/07	BDL	BDL	490	NA	NA	NA	
9	04/19/07	BDL	BDL	510	NA	NA	NA	
10	04/19/07	BDL	BDL	110	NA	NA	NA	
11	04/19/07	BDL	BDL	450	NA	NA	NA	
[redacted]								
1	04/20/07	BDL	BDL	340	NA	NA	NA	
2	04/20/07	BDL	BDL	560	NA	NA	NA	
3	04/20/07	BDL	BDL	570	NA	NA	NA	
4	04/20/07	BDL	BDL	280	NA	NA	NA	
5	04/20/07	BDL	BDL	170	NA	NA	NA	
6	04/20/07	BDL	BDL	90	NA	NA	NA	
7	04/20/07	BDL	BDL	34	NA	NA	NA	
[redacted]								
1	04/19/07	BDL	BDL	170	NA	NA	NA	
2	04/19/07	BDL	BDL	330	NA	NA	NA	
3	04/20/07	BDL	BDL	190	NA	NA	NA	
[redacted]								
1	04/19/07	0.011	BDL	35	NA	NA	NA	
[redacted]								
7	04/20/07	**0.0060**	13	120	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	280	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	460	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	1100	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	170	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	420	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	71	NA	NA	NA	
2	04/23/07	BDL	BDL	270	NA	NA	NA	
[redacted]								
1	04/23/07	BDL	BDL	860	NA	NA	NA	
2	05/01/07	BDL	BDL	89	NA	NA	NA	
3	05/01/07	BDL	BDL	100	NA	NA	NA	
4	05/01/07	BDL	BDL	23	NA	NA	NA	

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Table 2-3f
Keramida Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date 1	PCE (µg/kg)	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	BTEX (mg)	Sample Date 2	TPH-ERO (mg/kg)
[redacted]								
1	04/23/07	BDL	BDL	250	NA	NA	NA	
2	04/23/07	BDL	BDL	560	NA	NA	NA	
3	04/23/07	BDL	BDL	470	NA	NA	NA	
4	04/23/07	BDL	BDL	410	NA	NA	NA	
Riverside Golf Course								
RSGC10-1	04/24/07	NA	BDL	74	NA	NA	NA	
RSGC10-2	04/24/07	NA	BDL	77	NA	NA	NA	
RSGC12-2-1	04/24/07	NA	BDL	270	NA	NA	NA	
RSGC12-2-2	04/24/07	NA	14	140	NA	NA	NA	
RSGC12-2-3	04/24/07	NA	BDL	73	NA	NA	NA	
RSGC12-2-4	04/24/07	NA	BDL	290	NA	NA	NA	
RSGC12-2-5	04/24/07	NA	BDL	94	NA	NA	NA	
RSGC12-3SW	04/24/07	NA	BDL	73	NA	NA	NA	
RSGC12-4N	04/24/07	NA	BDL	290	NA	NA	NA	
RSGC12-5W	04/24/07	NA	BDL	94	NA	NA	NA	
RSGC13-1E	04/24/07	NA	BDL	69	NA	NA	NA	
RSGC13-2S	04/24/07	NA	BDL	75	NA	NA	NA	
RSGC13-3N	04/24/07	NA	BDL	570	NA	NA	NA	
RSGC13-4-1	04/24/07	NA	BDL	56	NA	NA	NA	
Coffin Golf Course								
CGC11-1	05/01/07	NA	BDL	39	NA	NA	NA	
CGC11-2	05/01/07	NA	BDL	51	NA	NA	NA	
CGC11-3	05/01/07	NA	BDL	56	NA	NA	NA	
CGC11-4	05/01/07	NA	BDL	27	NA	NA	NA	
CGC11-5	05/01/07	NA	BDL	BDL	NA	NA	NA	
CGC11-6	05/01/07	NA	BDL	130	NA	NA	NA	
CGC11-7	05/01/07	NA	BDL	18	NA	NA	NA	
CGC11-8	05/01/07	NA	BDL	54	NA	NA	NA	
CGC11-9	05/01/07	NA	BDL	36	NA	NA	NA	
CGC11-10	05/01/07	NA	BDL	26	NA	NA	NA	
CGC11-11	05/01/07	NA	BDL	BDL	NA	NA	NA	
CGC11-12	05/01/07	NA	BDL	BDL	NA	NA	NA	
CGC11-13	05/01/07	NA	BDL	440	NA	NA	NA	
CGC11-14	05/02/07	NA	BDL	71	NA	NA	NA	
CGC11-15	05/02/07	NA	BDL	130	NA	NA	NA	
CGC11-16	05/02/07	NA	BDL	32	NA	NA	NA	
CGC11-17	05/02/07	NA	BDL	64	NA	NA	NA	
CGC17-18	05/02/07	NA	BDL	BDL	NA	NA	NA	
CGC10-19	05/02/07	NA	BDL	300	NA	NA	NA	
CGC10-20	05/02/07	NA	BDL	47	NA	NA	NA	
Unknown Location								
ET-1	04/24/07	NA	BDL	BDL	NA	NA	NA	
EC-1	04/24/07	NA	BDL	13	NA	NA	NA	
WC1-1	04/24/07	NA	BDL	15	NA	NA	NA	
WC1-2	04/24/07	NA	BDL	27	NA	NA	NA	
W2-1	04/24/07	NA	BDL	22	NA	NA	NA	
W2-2	04/24/07	NA	BDL	74	NA	NA	NA	

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Table 2-3f
Keramida Historical Sampling Event Results
ESI Environmental, Inc.
4910 West 86th Street
Indianapolis, Marion County, Indiana

Sample ID	Sample Date 1	PCE (µg/kg)	TPH-GRO (mg/kg)	TPH-ERO (mg/kg)	TPH-DRO (mg/kg)	BTEX (mg)	Sample Date 2	TPH-ERO (mg/kg)
Product Analysis-Sewer								
AB33305	--	17.1	*16437*	*38257*	NA	NA	NA	
Product Analysis-East Million								
AB33306	--	14	*25824*	*41651*	NA	NA	NA	
[redacted]								
1	06/07/07	NA	NA	NA	NA	BDL	NA	
2	06/07/07	NA	NA	NA	NA	BDL	NA	
3	06/07/07	BDL	BDL	76	BDL	NA	NA	

Notes:
Exceeds IDEM RISC TPH Residential Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
Exceeds IDEM RISC TPH Industrial Soil Non-Default Closure Levels (Migration to Groundwater) - most stringent
"--" - not available
mg - milligram
mg/kg - millgram per kilogram
µg/kg - microgram per kilogram
BDL - below detection limit
BTEX - bezene, toluene, ethylbenzene, xylene
ERO - extended range organic
GRO - gasoline range organic
ID - identification
NA - not analyzed
NL - not listed
PCE - tetrachloroethane
TPH - total petroleum hydrocarbon

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APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 1 **Date:** 9/1/10
Direction: Northwest **Photographer:** Marcus Muccianti
Subject: Oil Storage Tank (designated "A" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 2 **Date:** 9/1/10
Direction: Southwest **Photographer:** Marcus Muccianti
Subject: Secondary Containment for Oil Storage Tank (designated "A" on Figure 2-1)

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Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 3 **Date:** 9/1/10
Direction: North **Photographer:** Marcus Muccianti
Subject: Unloading Building (designated "II" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 4 **Date:** 9/1/10
Direction: Northwest **Photographer:** Marcus Muccianti
Subject: Primary Separator (designated "D" on Figure 2-1)

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Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 5 **Date:** 9/1/10
Direction: Northwest **Photographer:** Marcus Muccianti
Subject: Off Spec Oil Storage Frac Tanks (designated "F" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 6 **Date:** 9/1/10
Direction: Northeast **Photographer:** Marcus Muccianti
Subject: Auxiliary Separator (designated "G" on Figure 2-1)

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Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 7 **Date:** 9/1/10
Direction: North **Photographer:** Marcus Muccianti
Subject: Wastewater Containment Area (located between designations "J" and "I" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 8 **Date:** 9/1/10
Direction: Southwest **Photographer:** Marcus Muccianti
Subject: API Oil Water Separator (designated "Q" on Figure 2-1) with Large Air Stripper (designated "KK" on Figure 2-1) beyond

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Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 9 **Date:** 9/1/10
Direction: Southeast **Photographer:** Marcus Muccianti
Subject: Dehydration Building (designated "NN" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 10 **Date:** 9/1/10
Direction: East **Photographer:** Marcus Muccianti
Subject: Off Spec Oil Storage Tanks (designated "GG" on Figure 2-1)

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Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 11 **Date:** 9/1/10
Direction: Southeast **Photographer:** Marcus Muccianti
Subject: API Oil Water Separator (designated "Q" on Figure 2-1)

Site: ESI Environmental, Inc. Site Assessment
Photograph No.: 12 **Date:** 9/1/10
Direction: East **Photographer:** Marcus Muccianti
Subject: Oil Storage Tanks (designated "BB" on Figure 2-1) with Off Spec Oil Storage Tanks (designated "GG" on Figure 2-1) beyond

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