TETRA TECH

February 26, 2015

Mr. Michael Davis
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 7
8600 NE Underground Drive, Pillar 253
Kansas City, Missouri 64161

Subject: **Integrated Site Assessment**
Independent Petrochemical Corporation Site, Saint Louis, Missouri
CERCLA ID: MOD066919440
U.S. EPA Region 7, START 4 Contract No. EP-S7-13-06, Task Order No. 0066
Task Monitor: Michael Davis, EPA On-Scene Coordinator

Dear Mr. Davis:

Tetra Tech, Inc. is submitting the enclosed Integrated Site Assessment report regarding Site Reassessment and Removal Site Evaluation activities at the Independent Petrochemical Corporation site in Saint Louis, Missouri. If you have any questions or comments, please contact me at (913) 908-4649.

Sincerely,

for Rick Claytor, CHMM
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

Enclosures

cc: Debra Dorsey, START Project Officer (cover letter only)

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Superfund

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INTEGRATED SITE ASSESSMENT
FOR A SITE REASSESSMENT AND REMOVAL SITE EVALUATION
INDEPENDENT PETROCHEMICAL CORPORATION SITE
SAINT LOUIS, MISSOURI

Superfund Technical Assessment and Response Team (START)
Contract No. EP-S7-13-06, Task Order 0066

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
11201 Renner Boulevard
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February 26, 2015

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division, under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), tasked Tetra Tech, Inc., (Tetra Tech) to conduct an Integrated Site Assessment (ISA) consisting of a Removal Site Evaluation (RSE) and a Site Reassessment (SR) of the Independent Petrochemical Corporation (IPC) site in Saint Louis, Missouri. The ISA was tasked under the Superfund Technical Assessment and Response Team (START) 4 contract, Task Order Number 0066. The primary purpose of the ISA was to determine the nature and general extent of contamination in groundwater, soil, sub-slab soil gas, and indoor air that may present a threat to human health and the environment.

Apparent Problem

The site has been historically used for storage of organic solvents, coal oil, and petroleum products. Samples collected from environmental media have contained detectable concentrations of numerous contaminants, indicating a release of those substances has occurred.

2.0 SITE DESCRIPTION

This section discusses the site's location and description, along with the geology and hydrogeology of the area.

2.1 SITE LOCATION

The IPC site is at 3930 Chouteau Avenue in urban St. Louis, Missouri (see Figure 1, Appendix A). The site is in St. Louis County, near the intersection of South Vandeventer Avenue and Chouteau Avenue. The population of St. Louis is approximately 320,000 (Mable/Geocorr 2010). Geographic coordinates of the approximate center of the site are 38.62787 degrees north latitude and 90.24645 degrees west longitude. The site is within Section 34, Township 2 North, Range 7 East, on the Granite City 7.5-minute topographic quadrangle map (U.S. Geological Survey [USGS] 1998).

2.2 SITE DESCRIPTION

The IPC facility operated from prior to 1925 to around 1980 and was used for storing organic solvents, coal oil, and petroleum products. Hazardous substances associated with the site include acetone, benzene, 2-butanone, butyl acetate, butyl alcohol, carbon tetrachloride, cyclohexane, cyclohexanone, dibutyl phthalate, dioctyl phthalate, ethyl acetate, ethylene dichloride, isobutyl alcohol, isophorone, methanol, methyl isobutyl ketone, methylene chloride, 2-nitropropane, orthodichlorobenzene, tetrachloroethene (PCE), sodium hydroxide, tetrahydrofuran, toluene, 1,1,1-trichloroethane (TCA), and xylene (EPA 1982).

In 1988, on-site structures included more than 30 aboveground storage tanks (AST) (mostly 15,000-gallon tanks), an oil warehouse, and a garage/oil storage building. Also, a Sanborn Fire Insurance Map from 1998 indicated presence of at least 13 underground storage tanks (UST) (Ecology and Environment [E&E] 1989a, b). Currently, two buildings—a warehouse leased for storage and repair of automobiles, and a bar (Bad Dog Bar)—are present on the property. The ASTs and USTs reportedly have been removed; however, the Missouri Department of Natural Resources (MDNR) has no records of their removal.

The approximately 1-acre site includes gravel parking areas and a concrete area around the bar. Concrete pavement is also around the warehouse; however, it is covered by gravel. The site is in a commercial/industrial section of the City; residential areas are within 0.5 mile of the site. The site is bounded north by Chouteau Avenue, east by railroad tracks, south by warehouses and light industrial buildings, and west by a concrete drive for a fast food restaurant. Runoff from the site flows to the southeast toward the railroad tracks. The nearest perennial surface water body is the Mississippi River,

approximately 3.5 miles east of the site. The Missouri and Mississippi Rivers supply most of the drinking water in the St. Louis area. The Compton Hill Reservoir, also used as a drinking water supply, is approximately 2 miles from the site (E&E 1989a, b).

2.3 SITE GEOLOGY AND HYDROGEOLOGY

Soil at the site is composed of the Urban Land-Harvester complex. Urban Land areas are covered by streets, parking lots, buildings, and other structures that obscure or alter the soils so identification of the soils is not feasible. Harvester soils are moderately well drained and typically found in areas of woody vegetation and along hillsides. Water capacity of Harvester soils is moderate (U.S. Department of Agriculture [USDA] 1979).

The site is within the Dissected Till Plains physiographic province (Miller 1974). Stratigraphy in the St. Louis area consists largely of limestones and dolomites that were deposited in shallow epicontinental seas. Some shales, siltstones, and sandstones are interbedded with these carbonates (E&E 1989a). The site overlies the post-Maquoketa aquifer group. This group contains bedrock units above the Ordovician-aged Maquoketa Shale. The Maquoketa Shale is likely a confining influence on groundwater movement. The most productive bedrock aquifers in the St. Louis area include the St. Peter Sandstone, Rubidoux Formation, Gasconade Dolomite, and Potosi Dolomite, which underlie the Maquoketa Shale. Alluvial aquifers also are important groundwater sources in the site area (Miller 1974).

3.0 PREVIOUS INVESTIGATIONS

EPA conducted a Site Inspection (SI) in 1988 and a Preliminary Assessment (PA) in 1989 (E&E 1989a, b). During these investigations, 16 surface soil and 2 pooled water samples were collected. The pooled water samples were collected from drainage areas at the southeast corner of the site.

Numerous volatile organic compounds (VOC) were detected in the surface soil samples. Total xylenes were detected in seven surface soil samples at concentrations ranging from 16 to 23,000 micrograms per kilogram (µg/kg). 1,1-Dichloroethane (DCA) (3.0 to 2,300 µg/kg), 1,2-dichloroethene (DCE) (14 to 2,000 µg/kg), 1,1,1-TCA (35 to 3,400 µg/kg), PCE (10 to 350 µg/kg), toluene (540 to 5,800 µg/kg), and ethyl benzene (160 to 3,900 µg/kg) were detected in four samples. Vinyl acetate (170 to 17,000 µg/kg) was detected in three samples. 1,1-DCE (430 and 640 µg/kg), trichloroethene (TCE) (80 and 1,200 µg/kg), and chlorobenzene (460 and 1,900 µg/kg) were detected in two samples. 2-Butanone was detected in one sample at a concentration of 2,000 µg/kg. None of these concentrations exceeded a Superfund Chemical Data Matrix (SCDM) benchmark (EPA 2004) or EPA Regional Screening Level (RSL) for industrial soil[1] (EPA 2014). The samples containing the highest concentrations of these compounds had been collected from around a loading dock and oily seep-like areas along the south margin of the site (E&E 1989a).

Numerous semivolatile organic compounds (SVOC) were also detected in the surface soil samples. Bis(2-ethylhexyl)phthalate was detected in seven samples (including a duplicate sample) at concentrations ranging from 230 to 120,000 µg/kg, exceeding its SCDM cancer risk (CR) screening concentration of 10,000 µg/kg in three samples. Pentachlorophenol (380 and 32,000 µg/kg) was detected in two samples, exceeding its CR of 1,000 µg/kg and RSL for industrial soil of 4,000 µg/kg in one sample. Benzo(a)pyrene (500 µg/kg) was detected in one sample, exceeding its CR of 20 µg/kg, and indeno(1,2,3-cd)pyrene (790 µg/kg) was detected in one sample, exceeding its CR of 200 µg/kg. Acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzofuran, 1,4-dichlorobenzene, 1,2-dichlorobenzene, di-n-octyl-phthalate, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene were all detected in at least one sample. However, none of these concentrations exceeded a SCDM benchmark or RSL for industrial soil (if established).

[1] Any reference to an RSL for soil or tapwater in this ISA presumes a hazard quotient of 0.1, unless otherwise specified.

Analytical results from one pooled water sample indicated 1,2-DCE at 11,000 micrograms per liter (µg/L), along with vinyl chloride (750 µg/L), methylene chloride (650 µg/L), toluene (2,200 µg/L), ethyl benzene (2,900 µg/L), and total xylenes (1,100 µg/L). The other sample contained 1,2-DCE (2,100 µg/L), vinyl chloride (550 µg/L), and 1,1,1- TCA (340 µg/L) (E&E 1989a).

4.0 ISA INVESTIGATION

Section 4.0 discusses the ISA field sampling and associated quality assurance (QA)/quality control (QC) activities. The general objectives of the ISA were to further evaluate potential source areas, better define the extent of soil and groundwater contamination, and assess vapor intrusion threats.

START Members (SM) Laura Moore and Cosmo Canacari (Geoprobe operator) conducted field activities on August 18-21, 2014, when soil and groundwater samples were collected, along with one water sample from a sump. On August 18, 2014, Construction Solutions (CS) from Paola, Kansas, performed a ground penetrating radar (GPR) scan and electromagnetic (EM) survey at the site to identify any remaining USTs. An area where USTs had been previously excavated was located, but no remaining USTs were identified in that area. EM readings confirmed the GPR data, indicating an area of excavation and fill, but no buried tanks. Photographs documenting site activities are in Appendix B. The CS geophysical survey report is in Appendix C.

Sub-slab soil gas sampling was conducted on August 27, 2014, after sampling ports had been installed at six locations in the two on-site buildings. Two sample locations were in the warehouse, and four sample locations were in the bar. On November 21, 2014, SM Rick Claytor conducted additional sub-slab soil gas and indoor air sampling, after the initial sub-slab sample results indicated elevated VOC concentrations at two of the locations (one in the bar and one in the warehouse).

Activities proceeded as specified in a site-specific Quality Assurance Project Plan (QAPP) for the ISA developed by START and submitted to EPA in August 2014 (Tetra Tech 2014). Samples collected under Analytical Services Request (ASR) 6561 were delivered by FedEx or conveyed by the sampler to the EPA Region 7 laboratory in Kansas City, Kansas, on August 20, 22, and 28, 2014. Samples collected under ASR 6681 were delivered by START to the EPA Region 7 laboratory on November 21, 2014. Standard turnaround times were requested for all samples. Field sheets and chain-of-custody records for the samples are in Appendix D.

4.1 SOIL SAMPLING

Based on previous investigations, site reconnaissance, and background information regarding possible source areas, a biased or judgmental sampling scheme was followed to select soil sampling locations. Soil samples were collected from eight Geoprobe soil borings (SO-1 through SO-8) at or near possible source areas (see Figure 2, Appendix A).

Soil cores were collected by use of Geoprobe 4-foot-long Macro-Core samplers with disposable polyvinyl chloride (PVC) liners. Soils were sampled continuously from the surface to 16 feet below ground surface (bgs) where possible. The soil cores were screened for VOC vapors by use of a photoionization detector (PID); no elevated PID readings were noted. Samples were collected at four intervals from each core when possible, to represent soil collected throughout the cores.

The soil samples were submitted to the EPA Region 7 laboratory for analyses for VOCs, SVOCs, total Resource Conservation and Recovery Act (RCRA) metals, and total petroleum hydrocarbons (TPH)-purgeables and extractables. At each interval selected for sampling, the sample for VOC analysis was collected with a tipless syringe; two 5-gram aliquots of soil were placed into two 40-milliliter (mL) vials preserved with sodium bisulfate, and two additional unpreserved 40-mL vials were filled with soil. Two other unpreserved 40-mL vials were also filled for TPH-purgeables analysis.

The remaining soil from each sample interval was placed in a disposable aluminum pie pan for homogenization, and then transferred to three 8-ounce jars. These containers were submitted for analyses for TPH-extractables, SVOCs, and metals. Pertinent data, including analyses to be performed and exact sample locations (depths and global positioning system [GPS] coordinates), were recorded on field sheets for each sample (see Appendix D). All soil samples were stored in coolers maintained at temperatures at or below 4°C, pending submittal to the EPA Region 7 laboratory. Table 1 summarizes the soil samples collected during the ISA.

TABLE 1

SOIL SAMPLE SUMMARY
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Boring Number	Sample Date	Sample Time	Sample Interval (ft bgs)	EPA Sample Number
SO-1	8/18/14	1545	0-3	6561-101
		1600	4-8	6561-102
		1610	8-10.5	6561-103
		1630	12-16	6561-104
SO-2	8/19/14	1000	0-3	6561-105
		1025	4-8	6561-106
		1035	8-10.5	6561-107
SO-3	8/19/14	1310	0-3.5	6561-108
		1315	4-7	6561-109
		1320	8-12	6561-110
		1325	12-16	6561-113
SO-4	8/19/14	1440	0-3	6561-111
		1500	4-7.5	6561-112
		1515	8-12	6561-114
		1530	12-16	6561-115-FD
SO-5	8/20/14	0910	0-4	6561-116
		0920	4-8	6561-117
		0940	8-12	6561-118
		0955	12-16	6561-119-FD
SO-6	8/20/14	1450	0-1.5	6561-120
		1510	8-12	6561-121
		1525	12-16	6561-122
SO-7	8/20/14	1550	0-4	6561-123
		1600	4-8	6561-124
		1630	8-12	6561-125
		1645	12-16	6561-126
SO-8	8/21/14	0855	4-8	6561-127
		1000	8-11.5	6561-128

Notes:

EPA U.S. Environmental Protection Agency
FD Field duplicate
ft bgs Feet below ground surface

Analytical Data Summary

EPA Region 7 laboratory data are presented in Appendix E. Analytical results from the soil samples are provided in tabular form in Appendix F.

SVOCs

Detectable concentrations of 23 SVOCs were identified in the soil samples. Concentrations of the following eight compounds exceeded SCDM benchmark concentrations (EPA 2004) or RSLs for industrial soil: benzo(a)anthracene in seven samples (ranging from 280 to 7,900 µg/kg), benzo(b)fluoranthene in two samples (11,000 and 14,000 µg/kg), benzo(k)fluoranthene in two samples (3,900 J and 10,000 µg/kg), benzo(a)pyrene in seven samples (230 to 9,600 µg/kg), indeno(1,2,3-cd)pyrene in four samples (220 to 9,400 µg/kg), dibenzo(a,h)anthracene in two samples (2,300 and 3,900 µg/kg), bis(2-ethylhexyl)phthalate in one sample (11,000 µg/kg), and pentachlorophenol in two samples (2,300 and 8,000 µg/kg). The "J" qualifier indicates the result is an estimate. These elevated SVOC concentrations were identified in 10 of the soil samples (including one field duplicate). Table 2 summarizes the samples containing SVOC concentrations exceeding SCDM benchmark values or RSLs for industrial soil.

TABLE 2

SVOC SUMMARY FOR SOIL SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenzo(a,h)anthracene	bis(2-Ethylhexyl)phthalate	Pentachlorophenol
				Concentration (µg/kg)							
SO-1, 0-3’	6561-101	8/18/14	1545	**5,200**	**14,000**	**10,000**	**9,100**	**9,400**	**3,900**	180 U	370 U
SO-3, 0-3.5’	6561-108	8/19/14	1310	**450**	440	260	**340**	**220**	170 U	170 U	340 U
SO-3, 12-16’	6561-113	8/19/14	1325	210 U	210 U	210 U	210 U	210 U	210 U	**11,000**	410 U
SO-4, 12-16’	6561-115	8/19/14	1530	**280**	300	230	**230**	200 U	200 U	350	400 U
SO-4, 12-16’	6561-115-FD	8/19/14	1530	**290**	310	240	**260**	200 U	200 U	350	400 U
SO-5, 4-8’	6561-117	8/19/14	0920	**560**	430	390	**360**	210 U	210 U	360	410 U
SO-6, 0-1.5’	6561-120	8/20/14	1450	**2,100**	2,800	1,000	**1,700**	**980**	960 U	180 U	1,900 U
SO-6, 8-12’	6561-121	8/20/14	1510	240 U	240 U	240 U	240 U	240 U	240 U	270	**8,000**
SO-6, 12-16’	6561-122	8/20/14	1525	230 U	230 U	230 U	230 U	230 U	230 U	210 U	**2,300**
SO-7, 0-4’	6561-123	8/20/14	1550	**7,900**	**11,000**	**3,900 J**	**9,600**	**5,200**	**2,300**	220 U	450 U
SCDM Reference Dose Screening Concentration				NE	NE	NE	NE	NE	NE	1,000,000	300,000
SCDM Cancer Risk Screening Concentration				200	NE	2,000	20	200	20	10,000	1,000
EPA Regional Screening Level (Industrial Soil), HQ=0.1				2,900	2,900	29,000	290	2,900	290	160,000	4,000

Notes:

BOLD	value exceeds an SCDM benchmark or Regional Screening Level.
’	Feet below ground surface
EPA	U.S. Environmental Protection Agency
FD	Field duplicate
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
µg/kg	Micrograms per kilogram
NE	Not established
SCDM	Superfund Chemical Data Matrix
SVOC	Semivolatile organic compound
U	The analyte was not detected at or above the reporting limit

VOCs

Detectable concentrations of 23 VOCs were identified in the soil samples. Concentrations of two analytes in one sample exceeded the SCDM CR screening concentrations and/or RSL for industrial soil: 1,1,2,2-tetrachloroethane (TCA) at a concentration of 6,100 µg/kg, and naphthalene at a concentration of 40,000 µg/kg. Table 3 summarizes the elevated VOC concentrations in the sample.

TABLE 3

VOC SUMMARY FOR SOIL SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	1,1,2,2-Tetrachloroethane	Naphthalene
				Concentration (µg/kg)	
SO-2, 0-3'	6561-105	08/19/14	1000	**6,100**	**40,000**
SCDM Reference Dose Screening Concentration				1,000,000	NE
SCDM Cancer Risk Screening Concentration				3,000	NE
EPA Regional Screening Level (Industrial Soil), HQ=0.1				2,700	17,000

Notes:

BOLD value exceeds an SCDM benchmark or Regional Screening Level.
' Feet below ground surface
EPA U.S. Environmental Protection Agency
HQ Hazard quotient
ID Identification
µg/kg Micrograms per kilogram
NE Not established
SCDM Superfund Chemical Data Matrix
VOC Volatile organic compound

RCRA Metals

Arsenic was identified in all soil samples at concentrations exceeding the SCDM benchmark or RSL for industrial soil. Concentrations in the samples ranged from 2.6 to 28.9 milligrams per kilogram (mg/kg). The average arsenic concentration in St. Louis County soils is 10.56 mg/kg (USGS 2015). All arsenic concentrations were less than three times the county average. Based on these data, arsenic detected in soil samples collected at the site is attributed to naturally occurring concentrations. None of the other metals detected in the soil samples exceeded SCDM benchmarks or RSLs for industrial soil.

TPH

Laboratory analysis identified seven samples that contained concentrations of purgeable TPH exceeding the Missouri Risk-Based Corrective Action (MRBCA) Lowest Default Target Level (LDTL) for TPH-

gasoline range organics (GRO) (MDNR 2006). Two samples contained concentrations of extractable TPH exceeding the MRBCA LDTL for TPH-diesel range organics (DRO) (MDNR 2006). Table 4 summarizes the soil samples containing elevated concentrations of TPH.

TABLE 4

TPH SUMMARY FOR SOIL SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	Extractable TPH (TPH-DRO)	Purgeable TPH (TPH-GRO)
				Concentration (mg/kg)	Concentration (µg/kg)
SO-1, 4-8’	6561-102	08/18/2014	1545	**11,640**	**1,210,000**
SO-2, 0-3’	6561-105	08/19/2014	1000	2,090	**3,650,000**
SO-2, 4-8’	6561-106	08/19/2014	1025	578	**1,420,000**
SO-2, 8-10.5	6561-107	08/19/2014	1035	401	**1,090,000**
SO-6, 0-1.5’	6561-120	08/20/2014	1450	**17,300**	370,000
SO-7, 0-4’	6561-123	08/20/2014	1550	2,890	**492,000**
SO-7, 4-8’	6561-124	08/20/2014	1600	3,280	**481,000**
SO-7, 12-16’	6561-126	08/20/2014	1645	287 J	**623,000**
MRBCA LDTL				4,150	385,000

Notes:

BOLD result exceeds a MRBCA LDTL concentration.

’	Feet below ground surface
DRO	Diesel range organics
GRO	Gasoline range organics
J	The reported value is an estimate
LDTL	Lowest Default Target Level
µg/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
MRBCA	Missouri Risk-Based Corrective Action
TPH	Total petroleum hydrocarbons

4.2 GROUNDWATER SAMPLING

Five temporary Geoprobe groundwater wells were installed on the site and sampled by START. Depths of the wells ranged from 9 to 36 feet bgs. Sampling locations are illustrated on Figure 2 in Appendix A.

Groundwater samples were collected from the wells by use of a Geoprobe Screen Point 15 sampling apparatus containing a 4-foot-long, Geoprobe reusable stainless steel screen driven directly below the water table or to the maximum depth possible. Groundwater samples were collected through the Geoprobe rods via disposable polyethylene tubing and a check valve. Water samples submitted for VOCs analysis were collected in four 40-mL vials and preserved with hydrochloric acid (HCl) to a pH of less than 2. Water samples submitted for analysis for TPH-purgeables were collected in two 40-mL vials and preserved with HCl to a pH of less than 2. Water samples submitted for analyses for SVOCs and TPH-

extractables were collected in 128-ounce amber jugs. Water samples for analysis for total RCRA metals were collected in 1-liter cubitainers and preserved with nitric acid (HNO_3) to a pH of less than 2. A portion of each sample was filtered in the field by use of a disposable 0.45-micrometer filter, and then transferred to another 1-liter cubitainer and preserved with HNO_3 for analysis for dissolved RCRA metals. The groundwater sampler and rods were decontaminated after sampling at each well location, and new tubing was used at each well location.

A field sheet was completed for each sample submitted for laboratory analysis (see Appendix D). The field sheets included the following information: water quality parameters, purge times or estimated purge volumes, property ownership information, exact sample locations (GPS coordinates), and analyses to be performed. All water samples were stored in coolers maintained at or below a temperature of 4°C pending submittal to the EPA Region 7 laboratory. A field blank and a VOC trip blank were also submitted to the laboratory. Table 5 summarizes the groundwater samples collected for the ISA.

TABLE 5

GROUNDWATER SAMPLE SUMMARY
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Boring Number	Sample Date	Sample Time	Sample Depth (ft bgs)	EPA Sample Number
GW-1	8/19/14	0845	36	6561-201
GW-2	8/19/14	1110	12	6561-202
GW-4	8/19/14	1730	9	6561-204
GW-4	8/19/14	1730	9	6561-204-FD
GW-6	8/20/14	1730	16	6561-205
GW-8	8/21/14	1130	12	6561-207
Field Blank	8/21/14	0930	None	6561-214-FB
Trip blank	8/19/14	1800	None	6561-215-FB

Notes:

EPA U.S. Environmental Protection Agency
FB Field blank or trip blank
FD Field duplicate
ft bgs Feet below ground surface

Analytical Data Summary

EPA Region 7 laboratory data from the groundwater samples are in Appendix E. Appendix F includes a tabular summary of analytical results from the six groundwater samples (including one field duplicate), along with the field blank and trip blank.

SVOCs

Laboratory analysis of the groundwater samples detected eight SVOCs. Concentrations of the following three analytes exceeded SCDM benchmark concentrations for groundwater or RSLs for tap water: 2-methylnaphthalene was identified in six samples at concentrations ranging from 20 to 160 µg/L, naphthalene was found in four samples at concentrations ranging from 8.4 to 120 µg/L, and 2,3,4,6-tetrachlorophenol was found in one sample at a concentration of 110 µg/L. Table 6 summarizes the samples that exceeded benchmark values.

TABLE 6

SVOC SUMMARY FOR GROUNDWATER SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	2-Methylnaphthalene	2,3,4,6-Tetrachlorophenol	Naphthalene
				Concentration (µg/L)		
GW-1-36’	6561-201	08/19/2014	0845	**76**	5.0 U	5.0 U
GW-2-12	6561-202	08/19/2014	1110	**20**	5.0 U	**9.5**
GW-4-9	6561-204	08/19/2014	1730	**22**	5.0 U	**8.4**
GW-4-9	6561-204-FD	08/19/2014	1730	**88**	10 U	**84**
GW-6-16’	6561-205	08/20/2014	1730	**160**	**110**	**120**
GW-8-12’	6561-207	08/20/2014	1130	**31**	5.0 U	5.0 U
Maximum Contaminant Level				NE	NE	NE
SCDM Reference Dose Screening Concentration				60	NE	300
SCDM Cancer Risk Screening Concentration				NE	NE	NE
EPA Regional Screening Level (tap water), HQ=0.1				3.6	24	0.17

Notes:

BOLD value exceeds an SCDM benchmark or Regional Screening Level.
’ Feet below ground surface
EPA U.S. Environmental Protection Agency
HQ Hazard quotient
µg/L Micrograms per liter
NE Not established
SCDM Superfund Chemical Data Matrix
SVOC Semivolatile organic compound
U The analyte was not detected at or above the reporting limit

VOCs

The laboratory identified 25 VOCs in the groundwater samples. Chloroform was identified only in the field blank, indicating it was likely a contaminant in the de-ionized (DI) water supplied by the laboratory. SCDM benchmark concentrations or RSLs for tap water were exceeded by concentrations of 15 VOCs. Those VOCs included 1,1- DCA in two samples (3.5 and 9.1 µg/L), 1,1-DCE in one sample (3.2 µg/L),

1,4-dichlorobenzene in two samples (each 14 µg/L), benzene in six samples (1.6 to 820 J µg/L), chlorobenzene in three samples (20 J to 2,600 µg/L), *cis*-1,2-DCE in five samples (2.7 to 140 J µg/L), ethyl benzene in five samples (19 to 320 µg/L), isopropylbenzene in three samples (51 to 140 µg/L), m- and/or p-xylene in four samples (98 to 2,100 µg/L), naphthalene in five samples (3.8 to 120 J µg/L), o-xylene in three samples (73 to 330 µg/L), PCE in one sample (8.4 µg/L), toluene in three samples (210 to 950 µg/L), TCE in one sample (18 µg/L), and vinyl chloride in five samples (1.7 to 13 µg/L). Table 7 summarizes the VOCs found at concentrations exceeding SCDM benchmark values or RSLs.

TABLE 7

VOC SUMMARY FOR GROUNDWATER SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Analyte	**MCL**	**SCDM RfD**	**SCDM CR**	**EPA RSL**	**Location**					
					GW-1 (36')	**GW-2 (12')**	**GW-4 (9')**	**GW-4-FD (9')**	**GW-6 (16')**	**GW-8 (12')**
	Concentration (µg/L)									
1,1-Dichloroethane	NE	3,000	11	2.7	**3.5**	1.0 UJ	1.0 U	1.0 U	**9.1**	1.0 U
1,1-Dichloroethene	7	700	NE	2.8	**3.2**	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	1,000	12	0.48	1.0 U	1.0 UJ	**14**	**14**	1.0 U	1.0 U
Benzene	5	60	1.2	0.45	**1.6**	**820 J**	**390**	**310**	**18**	**220**
Chlorobenzene	100	300	NE	7.8	1.0 U	**20 J**	**2,600**	**2,300**	7.2	4.5
cis-1,2-Dichloroethene	70	100	2.1	0.22	**56 J**	1.0 UJ	**12**	**12**	**140 J**	**2.7**
Ethyl Benzene	70	1,000	6.1	1.5	1.0 U	**150**	**280**	**320**	**64**	**19**
Isopropylbenzene	NE	1,000	NE	45	1.1	**140 J**	**51**	36	15	**140**
m- and/or p-Xylene	NE	3,000	NE	19	2.0 U	**98**	**2,100**	**1,900**	**320**	2.0 U
Naphthalene	NE	300	NE	0.17	2.0 U	**120 J**	**24**	**24**	**57 J**	**3.8**
o-Xylene	NE	3,000	NE	19	1.0 U	14	**280**	**330**	**73**	1.5
Tetrachloroethene	5	90	320	4.1	**8.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	1,000	NE	110	1.0 U	14 J	**950**	**910**	**210**	3.4
Trichloroethene	5	70	1	0.28	**18**	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	40	0.02	0.019	**13**	1.0 UJ	**1.7**	**1.9**	**6.2**	**1.8**

Notes:

BOLD value exceeds an SCDM benchmark or RSL.

'	Feet below ground surface	NE	Not established
CR	Cancer risk screening concentration	RfD	Reference dose screening concentration
EPA	U.S. Environmental Protection Agency	RSL	Regional Screening Level (tap water), HQ=0.1
FD	Field duplicate	SCDM	Superfund Chemical Data Matrix
GW	Groundwater	U	The analyte was not detected at or above the reporting limit
HQ	Hazard quotient	UJ	The analyte was not detected at or above the reporting limit, which is an estimate
J	The reported value is an estimate		
MCL	Maximum contaminant level	VOC	Volatile organic compound
µg/L	Micrograms per liter		

RCRA Metals

Some RCRA metals at concentrations exceeding SCDM benchmark concentrations or RSLs for tap water were identified in all of the groundwater samples. Total and dissolved arsenic levels exceeded at least one of those standards in all samples, with concentrations ranging from 23.9 to 133 µg/L for total arsenic, and 4.7 to 141 µg/L for dissolved arsenic. Barium levels exceeded a standard in all samples except 6561-205; concentrations of total barium above a standard ranged from 814 to 5,600 µg/L, and dissolved barium levels above a standard ranged from 396 to 849 µg/L. Concentrations of total cadmium exceeded a standard in two samples at 2.3 and 81.4 µg/L; dissolved cadmium was not detected in any sample. Total chromium levels were identified in three samples above a standard, at concentrations ranging from 40.3 to 204 J µg/L; all dissolved chromium concentrations were below SCDM benchmarks (no RSL has been established for chromium). Concentrations of total lead were identified in four of the samples above a standard, at levels ranging from 29 to 8,840 µg/L; all dissolved lead concentrations were below SCDM benchmarks (no RSL has been established for lead). One concentration of total selenium (31.7 µg/L) exceeded its RSL; however, all dissolved selenium concentrations were below SCDM benchmarks and its RSL. Sample 6561-201 was not submitted for analysis for dissolved metals, because of a limited amount of groundwater in the well. Table 8 summarizes metals detected in the groundwater samples.

TABLE 8

METALS SUMMARY FOR GROUNDWATER SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Total or Dissolved	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium
				Concentration (µg/L)					
GW-1 36’	6561-201	Total	08/19/14	**23.9**	**3,110**	**2.3**	**103**	**369**	10.0 U
GW-2 12’	6561-202	Total	08/19/14	**133**	**1,170**	1.0 U	**40.3**	**369**	5.0 U
		Dissolved		**88.1**	**674**	1.0 U	2.0 U	1.7	5.0 U
GW-4 9’	6561-204	Total	08/19/14	**84.1**	**835**	1.0 U	2.2	2.2	5.0 U
		Dissolved		**88.1**	**849**	1.0 U	2.0 U	1.0 U	5.0 U
GW-4 9’	6561-204-FD	Total	08/19/14	**83.3**	**814**	1.0 U	2.0 U	2.1	5.0 U
		Dissolved		**87.4**	**833**	1.0 U	2.0 U	1.0 U	5.0 U
GW-6 16’	6561-205	Total	08/20/14	**119**	226	1.0 U	9.1	**29.0**	5.0 U
		Dissolved		**141**	272	1.0 U	3.1	5.7	5.0 U
GW-8 12’	6561-207	Total	08/21/14	**86.5 J**	**5,600**	**81.4**	**204 J**	**8,840**	**31.7 J**
		Dissolved		**4.7**	**396**	1.0 U	2.0 U	1.0 U	5.0 U
Field Blank	6561-214-FB	Total	08/21/14	1.0 U	10.0 U	1.0 U	2.0 U	1.0 U	5.0 U
		Dissolved		1.0 U	10.0 U	1.0 U	2.0 U	1.0 U	5.0 U
Maximum Contaminant Level				10	3,000	5.0	100	15	50
SCDM Reference Dose Screening Concentration				4.0	2,000	7.0	40	NE	70
SCDM Cancer Risk Screening Concentration				0.044	NE	NE	NE	NE	NE
EPA Regional Screening Level (tap water), HQ=0.1				0.052	380	0.92	NE	NE	10

TABLE 8 (Continued)

METALS SUMMARY FOR GROUNDWATER SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Notes:

BOLD value exceeds an SCDM benchmark or Regional Screening Level.
’ Feet below ground surface
EPA U.S. Environmental Protection Agency
FD Field duplicate
GW Groundwater
HQ Hazard quotient
J The reported value is an estimate
µg/L Micrograms per liter
NE Not established
SCDM Superfund Chemical Data Matrix
U The analyte was not detected at or above the reporting limit

TPH

Extractable TPH was identified in one of the groundwater samples at concentration of 99.7 milligrams per liter (mg/L), exceeding the MRBCA LDTL for TPH-DRO (MDNR 2006). Purgeable TPH was detected in three samples at concentrations ranging from 22,300 to 29,900 µg/L, exceeding the MRBCA LDTL for TPH-GRO (MDNR 2006). Table 9 summarizes TPH detected in the groundwater samples.

TABLE 9

TPH SUMMARY FOR GROUNDWATER SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	Extractable TPH (TPH-DRO)	Purgeable TPH (TPH-GRO)
				Concentration (mg/L)	Concentration (µg/L)
GW-1 36’	6561-201	08/19/2014	0845	21.7	NA
GW-2 12’	6561-202	08/19/2014	1110	4.17	**29,900**
GW-4 9’	6561-204	08/19/2014	1730	2 U	**22,300**
GW-4 9’	6561-204-FD	08/19/2014	1730	2 U	**24,200**
GW-6 16’	6561-205	08/20/2014	1730	**99.7**	5,890
GW-8 12’	6561-207	08/21/2014	1130	2.69	3,190
Field Blank	6561-214-FB	08/21/2014	0930	2 U	40 U
MRBCA LDTL				34.3	18,100

Notes:

BOLD value exceeds an MRBCA LDTL concentration.
’ Feet below ground surface
DRO Diesel range organics
FB Field blank
FD Field duplicate
GRO Gasoline range organics
LDTL Lowest Default Target Level
µg/L Micrograms per liter
mg/L Milligrams per liter
MRBCA Missouri Risk-Based Corrective Action
NA Not analyzed
TPH Total petroleum hydrocarbons
U Analyte not detected at or above reporting limit

4.3 SUMP WATER SAMPLING

A water sample was collected from a concrete sump (approximately 16 feet by 8 feet and 5 feet deep) south of the warehouse in the southeast portion of the site. Former use of the sump is unknown. A previous report referred to the sump as an open concrete storage tank (E&E 1989a). The sump water sample was collected by use of a clean PVC scoop attached to a rod; the scoop was lowered into the sump to collect the water. The water was transferred to the appropriate sample containers and chemically preserved as previously described for groundwater samples collected at the IPC site. Pertinent data, including analyses to be performed and exact sample location (GPS coordinates), were recorded on the field sheet for the sump water sample. The water sample (6561-206) was submitted to the EPA Region 7 laboratory for analyses for VOCs, SVOCs, TPH-purgeables, TPH-extractables, and total and dissolved RCRA metals. The water sample was stored in a cooler and maintained at or below a temperature of 4°C, pending submittal to the EPA Region 7 laboratory.

Analysis of the sump water sample identified four VOCs: acetone at 8.4 µg/L, chloroethane at 1.4 µg/L, naphthalene at 4.5 µg/L, and toluene at 3.0 µg/L. Total and dissolved arsenic were identified at concentrations of 10.1 and 9.2 µg/L, respectively; total and dissolved barium were detected at 109 and 100 µg/L, respectively; and total lead was detected at 1.0 µg/L. No TPH or SVOCs were detected in the sample. Appendix E presents the EPA laboratory data from the sump water sample. Appendix F includes a tabular summary of analytical results.

4.4 SUB-SLAB SOIL GAS SAMPLING

On August 27, 2014, EPA collected seven sub-slab soil gas samples at the site. These samples were collected in 6-liter stainless steel Summa canisters. Four of the samples (plus one field duplicate) were collected from beneath the floor of the bar, and two were collected from beneath the floor of the warehouse.

The sub-slab soil gas samples were collected from beneath the foundations of the structures by penetrating the concrete floor with a rotary hammer drill and concrete bit. A stainless steel sampling port with attached stainless tubing was inserted into the drilled hole and sealed with cement grout. A hex nut plug was attached to the top of the sampling port. Each sampling port was leak checked by use of helium before sampling was conducted. The Summa canisters were attached to the ports by use of disposable plastic tubing. A grab sample was collected at each location by opening the evacuated canisters and allowing them to fill.

A field sheet was completed for each sample submitted for laboratory analysis (see Appendix D). The field sheets included the following information: start and end times, initial and final vacuum, sample identification, and analyses to be performed. All sub-slab soil gas samples, including one field duplicate, were submitted to the EPA Region 7 laboratory. Sampling locations are illustrated on Figure 2 in Appendix A. Table 10 summarizes the sub-slab soil gas samples.

TABLE 10

SUB-SLAB SOIL GAS SAMPLE SUMMARY
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Boring Number	Sample Date	Sample Time Start	Sample Time End	EPA Sample Number
SSG-1 (Bar)	8/27/14	0737	0854	6561-1
SSG-2 (Bar)	8/27/14	0752	0856	6561-2
SSG-3 (Bar)	8/27/14	0806	0858	6561-3
SSG-4 (Bar)	8/27/14	0820	0924	6561-4
SSG-4FD (Bar)	8/27/14	0820	0924	6561-4-FD
SSG-5 (Warehouse)	8/27/14	0847	0929	6561-5
SSG-6 (Warehouse)	8/27/14	0917	0941	6561-6

Notes:

EPA U .S. Environmental Protection Agency
FD Field duplicate
SSG Sub-slab soil gas

Analytical Data Summary

EPA Region 7 laboratory data from the sub-slab soil gas samples are in Appendix E. Thirty-eight VOCs were detected in the sub-slab samples. Detected concentrations of the following five VOCs exceeded health-based benchmark concentrations (EPA RSLs for industrial air, at a cancer risk of 1 X 10^{-5}, and a Hazard Index of 1 for non-carcinogenic effects) by a factor of 10 in three samples: 1,1-DCA in samples 6561-4 and -4-FD; chloroform in samples 6561-4 and -4-FD; PCE in samples 6561-4 and -4-FD; TCE in samples 6561-4, -4-FD, and -5; and vinyl chloride in sample 6561-5. Table 11 summarizes results for those five VOCs.

TABLE 11

VOC SUMMARY FOR SUB-SLAB SOIL GAS SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	1,1-Dichloroethane	Chloroform	Tetrachloroethene	Trichloroethene	Vinyl Chloride
				Concentration (µg/m^3)				
SSG-1	6561-1	08/27/2014	0737	2.1	1.4	7.4	1.2	0.55 U
SSG-2	6561-2	08/27/2014	0752	1.1	3.3	210	1.1 U	0.55 U
SSG-3	6561-3	08/27/2014	0806	0.84 U	5.5	330	87	0.55 U
SSG-4	6561-4	08/27/2014	0820	**69,000**	**460**	**140,000**	**28,000**	5.5 U
SSG-4	6561-4-FD	08/27/2014	0820	**83,000**	**560**	**160,000**	**37,000**	5.5 U
SSG-5	6561-5	08/27/2014	0847	630	10	1,500	**1,700**	**1,400**
SSG-6	6561-6	08/27/2014	0917	13	10	570	78	5.5 U
EPA RSL (Industrial Air), 1E-05 cancer risk				77	5.3	470	30	28
EPA RSL (Industrial Air), HI=1 (non-carcinogenic effects)				NE	430	180	8.8	440

Notes:

BOLD value exceeds the lowest RSL for indoor air by a factor of 10.
EPA U.S. Environmental Protection Agency
FD Field duplicate
HI Hazard index
ID Identification
µg/m^3 Micrograms per cubic meter
NE Not established
RSL Regional Screening Level
SSG Sub-slab soil gas
U The analyte was not detected at or above the reporting limit

4.5 FOLLOW-UP SAMPLING

On November 20, 2014, EPA and START returned to the site to collect additional samples. The initial sub-slab soil gas sampling had identified five compounds that could exceed levels of concern in indoor air within overlying structures, assuming that indoor air concentration could be as high as 10 percent of the sub-slab vapor concentration. At two locations where elevated concentrations of VOCs had been detected in August 2014, follow-up sub-slab soil gas and indoor air samples were collected. One location was in the warehouse (previous location of SSG-5), and one location was in the bar (previous location of SSG-4). Previously installed sub-slab sampling ports were used to collect the follow-up sub-slab soil gas samples. Indoor air samples were collected adjacent to the sub-slab samples at approximately 30 inches above the floor (see Appendix B). Summa canisters were used for collection of these samples as before.

Each 6-liter stainless steel canister was fitted with a passive flow regulating device to enable collection of an air sample for a continuous 8-hour period. In addition to the sub-slab and indoor air samples, one ambient air sample was collected during the same 8-hour period at an outside location. The ambient air sample was located approximately 15 feet south of the warehouse. Pertinent data, including analyses to be performed and exact sample locations, were recorded on field sheets for each sample. Table 12 summarizes the samples collected in November 2014.

TABLE 12

FOLLOW-UP SUB-SLAB SOIL GAS, INDOOR AIR, AND AMBIENT AIR SAMPLE SUMMARY INDEPENDENT PETROCHEMICAL CORPORATION SITE ST. LOUIS, MISSOURI

Sample Location	Sample Date	Sample Time Start	Sample Time End	EPA Sample Number
Location-5 sub-slab (Warehouse)	11/20/14	0744	1533	6681-1
Location-5 indoor (Warehouse)	11/20/14	0745	1535	6681-2
Location-3 south of warehouse (Outside)	11/20/14	0747	1540	6681-3
Location-4 sub-slab (Bar)	11/20/14	0812	1604	6681-4
Location-4 indoor (Bar)	11/20/14	0813	1605	6681-5
Location-4 indoor duplicate (Bar)	11/20/14	0813	1606	6681-5-FD

Notes:

EPA U .S. Environmental Protection Agency
FD Field duplicate

Analytical Data Summary

The laboratory data for ASR 6681 were received by START on December 15, 2014. In the sub-slab soil gas samples (6681-1 and -4), 16 VOCs were detected. Compounds identified at elevated concentrations during the August 2014 sampling event were also detected in one or both of the November 2014 sub-slab samples. Two of the contaminants that had been detected at elevated concentrations in the previous sub-slab samples—1,1-DCA and TCE—were identified in the November 2014 sub-slab soil gas samples at concentrations exceeding RSLs for industrial air (for a cancer risk of 1 X 10^{-5}, and a Hazard Index of 1 for non-carcinogenic effects) by at least a factor of 10.

In the indoor air samples (6681-2, -5, and -5-FD), 23 VOCs were identified; however, no VOC concentration exceeded RSLs (for previously identified cancer and non-carcinogenic risk levels) in the indoor air samples. The indoor air samples collected in the bar (6681-5 and-5-FD) contained 1,1-DCA at 17 micrograms per cubic meter (µg/m^3) in each sample, PCE at 19 µg/m^3 in each sample, TCE at 3.2 and

2.0 µg/m^3, and vinyl chloride at 0.96 and 0.94 µg/m^3. The indoor air sample collected in the warehouse (6681-2) contained PCE at 6.6 µg/m^3.

In the ambient air sample (6681-3), 15 VOCs were identified. Of the contaminants identified at elevated concentrations in the sub-slab soil gas samples, only PCE was identified in the ambient air sample, at a concentration of 4.3 µg/m^3.

Table 13 summarizes the November 2014 sample results for VOCs detected at elevated concentrations in the August 2014 sub-slab soil gas samples. EPA laboratory data from the November 2014 air sampling activities are in Appendix E.

TABLE 13

SELECTED VOC SUMMARY FOR FOLLOW-UP SUB-SLAB SOIL GAS, INDOOR AIR, AND AMBIENT AIR SAMPLES
INDEPENDENT PETROCHEMICAL CORPORATION SITE
ST. LOUIS, MISSOURI

Sample Location ID	Sample Number	Sample Date	Sample Time	1,1-Dichloroethane	Chloroform	Tetrachloroethene	Trichloroethene	Vinyl Chloride
				Concentration (µg/m^3)				
SSG-5	6681-1	11/20/2014	07:44	110	10 U	140	**230**	69
Indoor @ SSG-5	6681-2	11/20/2014	07:45	0.84 U	1.0 U	6.6	1.1 U	0.55 U
Outside Ambient Air	6681-3	11/20/2014	07:47	0.84 U	1.0 U	4.3	1.1 U	0.55 U
SSG-4	6681-4	11/20/2014	08:12	**2,400**	16	**4,100**	**580**	5.5 U
Indoor @ SSG-4	6681-5	11/20/2014	08:13	17	1.0 U	19	3.2	0.96
Indoor @SSG-4	6681-5-FD	11/20/2014	08:13	17	1.0 U	19	2.0	0.94
EPA RSL (Industrial Air), 1E-05 cancer risk				77	5.3	470	30	28
EPA RSL (Industrial Air), HI=1 (non-carcinogenic effects)				NE	430	180	8.8	440

Notes:

BOLD value exceeds the lowest RSL for indoor air by a factor of 10.
EPA U.S. Environmental Protection Agency
FD Field duplicate
HI Hazard index
µg/m^3 Micrograms per cubic meter
NE Not established
RSL Regional Screening Level
SSG Sub-slab soil gas
U Undetected

Table 14 lists results for all detected VOCs in the indoor and ambient air samples collected in November 2014.

TABLE 14

COMPREHENSIVE VOC SUMMARY FOR FOLLOW-UP INDOOR AND AMBIENT AIR SAMPLES INDEPENDENT PETROCHEMICAL CORPORATION SITE ST. LOUIS, MISSOURI

Analyte	HI=1 (Non-cancer Effects)	1E-05 Cancer Risk	Indoor air (warehouse) 6681-2	Indoor air (bar) 6681-5	Indoor air (bar) 6681-5-FD	Ambient air 6681-3
	Concentration (µg/m^3)					
Acetone	140,000	NE	4.8	13	13	ND
Benzene	130	16	ND	0.99	1.0	2.8
2-Butanone	NE	NE	0.63	1.0	1.0	0.78
Chloroethane	NE	NE	ND	2.4	2.4	ND
Chloromethane	390	NE	1.2	1.1	1.1	1.2
Cyclohexane	26,000	NE	ND	1.8	1.8	3.4
Dichlorodifluoromethane	440	NE	2.8	4.2	4.2	2.8
1,1-Dichloroethane	NE	77	ND	17	17	ND
cis-1,2-Dichloroethene	NE	NE	ND	4.0	3.9	10
Ethyl Acetate	310	NE	ND	1.2	1.2	ND
4-Ethyltoluene	NE	NE	ND	1.6	1.6	ND
Heptane	NE	NE	ND	3.8	3.6	ND
Hexane	3,100	NE	1.1	3.0	3.0	ND
Methylene Chloride	2,600	1,200	ND	1.9	1.8	ND
2-Propenol	NE	NE	2.0	15	16	7.7
Propene	NE	NE	0.6	1.1	1.1	0.87
Tetrachloroethene	180	47	6.6	19	19	ND
Toluene	22,000	NE	1.6	7.2	7.2	ND
Trichloroethene	8.8	30	ND	3.2	3.0	ND
Trichlorofluoromethane	3,100	NE	1.6	1.6	1.6	1.6
1,2,4-Trimethylbenzene	31	NE	ND	8.2	8.3	3.5
1,3,5-Trimethylbenzene	NE	NE	ND	3.2	3.2	1.1
2,2,4-Trimethylpentane	NE	NE	ND	2.0	2.0	8.6
Vinyl Acetate	880	NE	ND	0.72 U	0.79	2.3
Vinyl Chloride	440	2.8	ND	0.96	0.96	ND
m- and/or p-Xylene	440	NE	ND	3.2	3.2	8.9
o-Xylene	440	NE	ND	2.1	2.1	3.1

Notes:

FD Field duplicate
HI Hazard index
µg/m^3 Micrograms per cubic meter
ND Not detected
NE Not established
U Analyte not detected at or above the reporting limit

5.0 HAZARD RANKING SYSTEM FACTORS

This section discusses the sources of contamination and the contaminant migration pathways evaluated under the Hazard Ranking System (HRS). Although a release of TPH to environmental media may have also occurred at the site, evaluation of petroleum-related contamination is excluded from HRS evaluation.

5.1 SOURCES OF CONTAMINATION

Sources of hazardous substances include possible leaks, spills, or improper disposal of materials historically handled at the facility. During the ISA, concentrations of 23 SVOCs were identified in soil samples collected at the site. Concentrations of eight of these compounds exceeded SCDM benchmark concentrations: benzo(a)anthracene in seven samples, benzo(b)fluoranthene in two samples, benzo(k)fluoranthene in two samples, benzo(a)pyrene in seven samples, indeno(1,2,3-cd)pyrene in four samples, dibenzo(a,h)anthracene in two samples, bis(2-ethylhexyl)phthalate in one sample, and pentachlorophenol in two samples. Detectable concentrations of 23 VOCs were also identified in the soil samples. Concentration of two of these compounds—1,1,2,2-TCA and naphthalene—in one sample exceeded the SCDM CR screening concentration and/or RSL for industrial soil. Arsenic was identified in all soil samples at concentrations that exceeded SCDM benchmarks; however, the arsenic levels are attributed to naturally occurring concentrations. No other metals were detected in the soil samples at levels exceeding SCDM benchmark concentrations.

Locations of sampling that yielded elevated SVOC concentrations represented approximately two-thirds of the 1-acre site. All sampling data were obtained from within the site boundaries; the elevated SVOC concentrations are consistent with historical use of the property.

5.2 GROUNDWATER PATHWAY

This section discusses the groundwater pathway.

5.2.1 Hydrogeological Setting

The hydrogeology of the area is discussed in Section 2.3.

5.2.2 Groundwater Targets

The 2010 census data indicate that 110,334 people reside within a 4-mile radius from the site (Mable/Geocorr 2010). In this urban area, drinking water for that population is provided by public water supplies. The Missouri and Mississippi Rivers supply most of the drinking water in the St. Louis area.

The Compton Hill Reservoir, also used for drinking water, is approximately 2 miles from the site. No municipal wells are within 4 miles of the site. Two private wells were identified within 1 mile of the site, although their use is unknown. Figure 3 in Appendix A shows registered wells within a 4-mile radius of the site.

5.2.3 Groundwater Pathway Conclusions

A release of VOCs, SVOCs, and metals has likely occurred at the IPC site. VOC concentrations exceeding SCDM benchmarks were identified in all groundwater samples collected. All groundwater samples were collected from within the site boundaries; no off-site background samples were collected. However, because drinking water for most users within 4 miles of the site is provided via public water systems supplied by surface water, the threat to human health via the groundwater pathway is minimal.

5.3 SURFACE WATER PATHWAY

The Mississippi River is approximately 3.5 miles from the site. Most runoff from the site enters storm water drains and is not directed toward the Mississippi River; therefore, no probable point of entry (PPE) to the Mississippi River can be identified. Given the hydrologic setting of the site and non-use of surface water for drinking water within 2 miles of the site, the threat via the surface water pathway is minimal.

5.4 SOIL EXPOSURE AND AIR PATHWAYS

Surface soil samples collected at the IPC site contained several SVOCs at concentrations above SCDM benchmarks at locations that represented approximately two-thirds of the 1-acre property. The population within 1 mile of the site is 16,790 (Mable/Geocorr 2010). The bar employs approximately 8 people. A fast food restaurant is approximately 40 feet west of the site and employs about 25 people. No residences, day cares, or schools are in the immediate area. The closest residences are about 0.5 mile from the site. Consequently, the soil exposure pathway is not likely to be significant for HRS scoring at this site.

The air pathway was not evaluated for the IPC site. No releases to ambient air at the site are believed to occur that would present a threat to human health or the environment, or significantly impact HRS scoring at this site.

6.0 EMERGENCY RESPONSE AND REMOVAL ACTION CONSIDERATIONS

The National Contingency Plan [40 *Code of Federal Regulations* [CFR] 300.415(b) (2)] authorizes EPA to consider emergency response actions at those facilities that pose an imminent threat to human health or the environment. Analytical data from soils may be evaluated by EPA risk assessors to determine whether a removal action, potentially involving excavation of contaminated soils, is warranted. The exposure pathway evaluations did not indicate that a referral to EPA Region 7 for emergency response activities is warranted.

The EPA Region 7 Vapor Intrusion Decision Matrix was used by EPA to evaluate the vapor intrusion sampling data. Because no VOCs were detected above levels of concern in indoor air samples as determined by EPA Region 7, no immediate action was recommended. However, EPA Region 7 recommended follow-up quarterly sub-slab soil gas and indoor air sampling (three additional rounds of sampling) to more thoroughly evaluate the vapor intrusion threat presented to workers and patrons of businesses at/near the site (see Appendix G). If it is determined that sufficient risk exists, installation of vapor mitigation systems at the impacted businesses under a removal action may be warranted.

7.0 SUMMARY

EPA Region 7, under authority of CERCLA and SARA, tasked Tetra Tech to conduct an ISA of the IPC site in St. Louis, Missouri, under START 4 Contract Number EP-S7-13-06, Task Order Number 0066.

The IPC facility operated from prior to 1925 to around 1980 and was used for storing organic solvents, coal oil, and petroleum products. Hazardous substances associated with the site include acetone, benzene, butyl acetate, butyl alcohol, carbon tetrachloride, cyclohexane, cyclohexanone, dibutyl phthalate, dioctyl phthalate, ethyl acetate, ethylene dichloride, isobutyl alcohol, isophorone, methanol, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, 2-nitropropane, orthodichlorobenzene, PCE, sodium hydroxide, tetrahydrofuran, toluene, 1,1,1-TCA, and xylene. In 1988, on-site structures included more than 30 ASTs, an oil warehouse, and a garage/oil storage building. Historical maps also indicated presence of at least 13 USTs. Currently, two buildings—a warehouse and a bar—are present on the property. The ASTs and USTs reportedly have been removed; however, MDNR has no records of their removal.

EPA conducted an SI in 1988 and a PA in 1989. During these investigations, 16 surface soil and 2 pooled water samples were collected. The pooled water samples were collected from drainage areas at the southeast corner of the site. Numerous VOCs and SVOCs were detected in the surface soil samples; several compounds were at levels above SCDM benchmarks or RSLs for industrial soil. The pooled water samples contained detected levels of 1,2-DCE, vinyl chloride, methylene chloride, toluene, ethyl benzene, 1,1,1-TCA, and total xylenes.

In August 2014, START subcontracted a geophysical survey at the site to locate any remaining USTs. An area where USTs had been removed was located, but no remaining USTs were identified. Field activities were also conducted by START to further evaluate potential source areas, better define the extent of soil and groundwater contamination, and assess vapor intrusion threats.

In August 2014, START also conducted sampling of soil, groundwater, sump water, and sub-slab soil gas at the site for an ISA. Detectable concentrations of 23 SVOCs were identified in the soil samples. Levels of the following eight of these compounds exceeded SCDM benchmark concentrations or RSLs: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, bis(2-ethylhexyl)phthalate, and pentachlorophenol. Detectable concentrations of 23 VOCs were also identified in the soil samples; however, concentration of two of these compounds (1,1,2,2-tetrachloroethane and naphthalene) exceeded a benchmark concentration. Arsenic was identified in all soil samples at concentrations exceeding benchmark values;

however, these elevated arsenic levels are attributed to naturally occurring concentrations. No other metals in the soil samples exceeded benchmark concentrations. Seven soil samples contained concentrations of purgeable TPH that exceeded the MRBCA LDTL for TPH-GRO. Two samples contained concentrations of extractable TPH that exceeded the MRBCA LDTL for TPH-DRO. Although a release of TPH may have occurred at the site, evaluation of petroleum-related contamination is excluded from HRS evaluation.

The laboratory identified 25 VOCs in groundwater samples collected from five Geoprobe wells. Benchmark concentrations were exceeded by concentrations of the following 15 of those VOCs: 1,1-DCA, 1,1-DCE, 1,4-dichlorobenzene, benzene, chlorobenzene, *cis*-1,2-DCE, ethyl benzene, isopropylbenzene, m- and/or p-xylene, naphthalene, o-xylene, PCE, toluene, TCE, and vinyl chloride. Laboratory analysis of the groundwater samples identified eight SVOCs. Benchmark concentrations were exceeded by concentrations of three of those analytes: 2-methylnaphthalene, naphthalene, and 2,3,4,6-tetrachlorophenol. Some RCRA metals were detected at levels exceeding benchmark concentrations in all of the groundwater samples. Concentrations of total arsenic and dissolved arsenic exceeded at least one of those standards in all samples. Levels of total and dissolved barium exceeded a standard in all samples except one. Concentrations of total cadmium exceeded a standard in two samples; dissolved cadmium was not detected in any sample. Total chromium concentrations were detected in three samples above a standard; all dissolved chromium concentrations were below established benchmarks. Concentrations of total lead were identified in four of the samples above a standard; all dissolved lead concentrations were below established benchmarks. One concentration of total selenium exceeded a benchmark; dissolved selenium concentrations were below benchmarks. Extractable TPH was identified in one of the groundwater samples above the MRBCA LDTL for TPH-DRO. Concentrations of purgeable TPH were identified in three samples above the MRBCA LDTL for TPH-GRO.

Analysis of the sump water sample identified four VOCs: acetone, chloroethane, naphthalene, and toluene. Total and dissolved arsenic were identified, along with total and dissolved barium and total lead; no benchmark concentrations were exceeded. No TPH or SVOCs were detected in the sample.

Sub-slab soil gas sampling was conducted at six locations beneath the two on-site buildings in August 2014. At two sample locations, one in the warehouse and one in the bar, elevated concentrations of five VOCs were found.

In November 2014, additional sampling activities (sub-slab soil gas, indoor air, and ambient air) were conducted at the site. In the November 2014 sub-slab samples, 16 VOCs were detected. VOCs identified at elevated concentrations during the August 2014 sampling event were also detected in the November 2014 sub-slab samples. Two of the VOCs that had been detected at elevated levels in the previous sub-slab samples—1,1-DCA and TCE—were identified in the November 2014 sub-slab soil gas samples at concentrations exceeding RSLs for industrial air (for a cancer risk of 1×10^{-5}, and a Hazard Index of 1 for non-carcinogenic effects) by at least a factor of 10. In the indoor air samples collected in November 2014, 23 VOCs were identified; however, no VOC concentrations exceeded RSLs (for previously identified cancer and non-carcinogenic risk levels) in the indoor air samples. The two indoor samples collected in the bar contained 1,1-DCA, PCE, TCE, and vinyl chloride. The indoor air sample collected in the warehouse contained PCE.

Analytical data from soils may be evaluated by EPA risk assessors to determine whether a removal action, potentially involving excavation of contaminated soils, is warranted. In addition, EPA Region 7 has recommended follow-up quarterly sub-slab soil gas and indoor air sampling (three additional rounds of sampling) to more thoroughly evaluate the vapor intrusion threat presented to workers and patrons of businesses at/near the site. If follow-up CERCLA site assessment involving HRS scoring is determined necessary, off-site background soil and groundwater sampling will likely be required to better document whether an observed release has occurred at the IPC site.

8.0 REFERENCES

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APPENDIX A

FIGURES

N

0 85 170

Feet

Source: ESRI, Online Data, World Imagery, 2013

Independent Petrochemical Corporation
3930 Chouteau Avenue
St. Louis City, Missouri

Figure 1
Site Location Map

TETRA TECH

Date: 7/30/2014 Drawn By: Clayton Hayes Project No: X9025.14.0066.000

X:\G\9025\0066\000\Projects\mxd\Figure1_073014.mxd

Legend

- Ambient air sample location
- DPT soil sample location
- DPT soil and groundwater sample location
- Groundwater sample location
- Sub-slab soil gas sample location
- Sump water sample location
- Approximate site boundary
- DPT Direct push technology

* SSG-4 and SSG-5 were co-located with indoor air sample locations during the November 2014 sampling event.

Source: ESRI, Online Data, World Imagery, 2013; The Sanborn Library L.L.C., 1998 Certified Sanborn Map, 1998

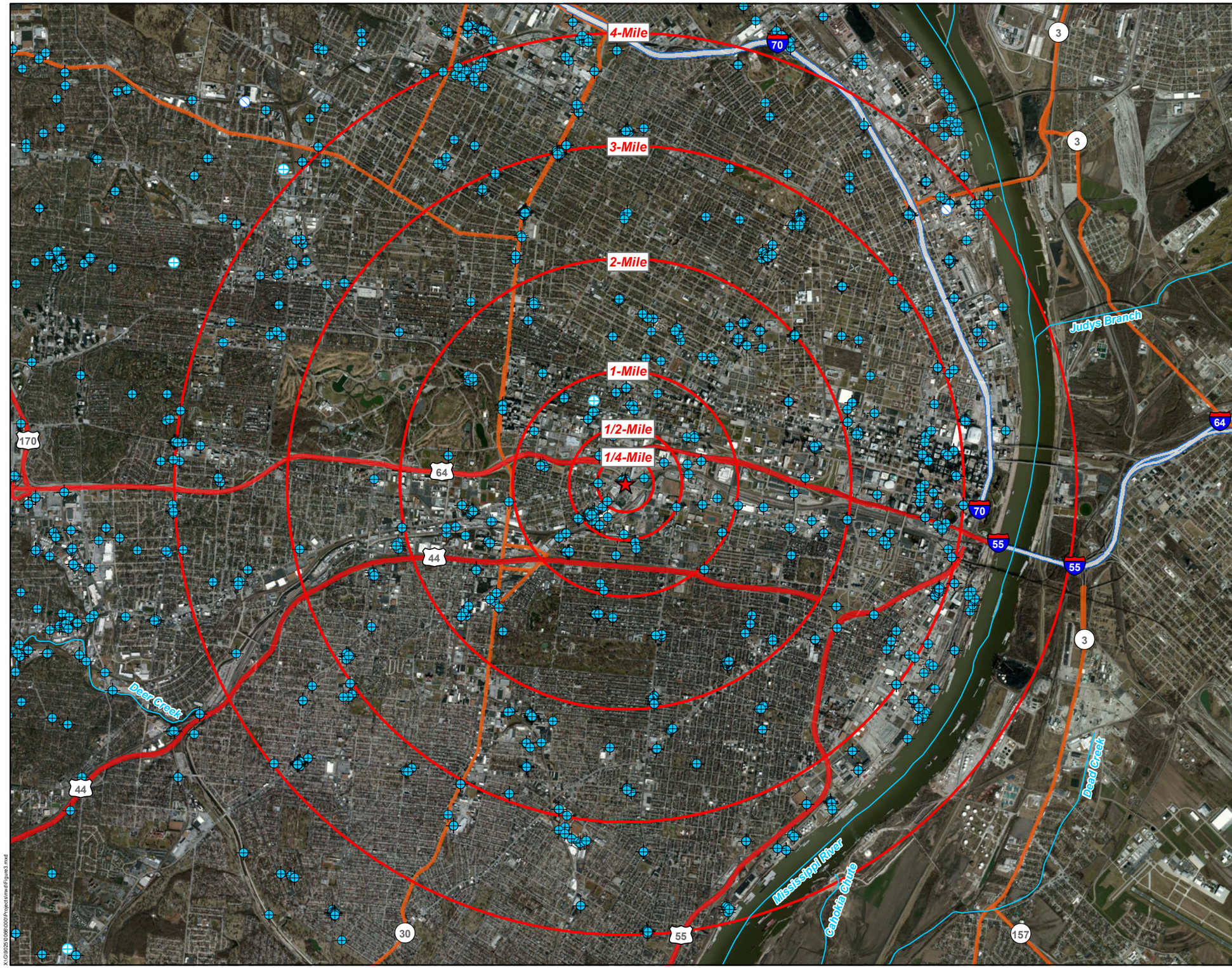
Independent Petrochemical Corporation
3930 Chouteau Avenue
St. Louis City, Missouri

Figure 2
Sample Location Map

TETRA TECH

Date: 2/11/2015 Drawn By: Nick Wiederholt Project No: X9025.14.0066.000

X:\G\9025\0066\00\Projects\mxd\Figure2_011215.mxd



Legend

- Site location
- Domestic well location
- Monitoring well location
- Unknown well location
- Interstate highway
- Route highway
- State highway
- Stream/river
- Radius ring

N

0 2,250 4,500

Feet

Source: ESRI, ArcGIS Online, World Imagery Service, 2012;
ESRI Data and Maps, 2007;
HSIP Gold, 2007;
Missouri Department of Natural Resources (DNR),
Missouri Geological Survey (MGS), Geological
Survey Program (GSP), Wellhead Protection Section (WHP), 2014

Independent Petrochemical Corporation
3930 Chouteau Avenue
St. Louis City, Missouri

Figure 3

4-Mile Radius Well Map

TETRA TECH

Date: 2/11/2015 Drawn By: Nick Wiederholt Project No: X9025.14.0066.000

X:\0\9\025\0066\000\Projects\mxd\Figure3.mxd

APPENDIX B

PHOTOGRAPHIC LOG

Independent Petrochemical Corporation Site
St. Louis, Missouri

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows the parking area between the two buildings on site.	1
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: Southeast	PHOTOGRAPHER	L. Moore	8/18/14

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows sample locations SO-1 and GW-1 and a covered concrete sump.	2
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: Southeast	PHOTOGRAPHER	L. Moore	8/19/14

Independent Petrochemical Corporation Site
St. Louis, Missouri

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows sample locations SO-2 and GW-2.	3
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: South	PHOTOGRAPHER	L. Moore	8/19/14

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows sample location SO-3.	4
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: South	PHOTOGRAPHER	L. Moore	8/19/14

Independent Petrochemical Corporation Site
St. Louis, Missouri

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows collection of soil samples at location SO-5.	5
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: Northwest	PHOTOGRAPHER	L. Moore	8/20/14

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows sample locations SO-8 and GW-8.	6
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: West	PHOTOGRAPHER	L. Moore	8/20/14

Independent Petrochemical Corporation Site
St. Louis, Missouri

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows setup for sub-slab soil gas sampling in the warehouse.	7
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: North	PHOTOGRAPHER	M. Davis	8/27/14

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows collection of sub-slab soil gas and indoor air sampling at Location 5 in the warehouse.	8
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: South	PHOTOGRAPHER	R. Claytor	11/20/14

Independent Petrochemical Corporation Site
St. Louis, Missouri

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows Summa canisters used for collection of sub-slab soil gas and indoor air samples at Location 4 in the tavern.	9
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: West	PHOTOGRAPHER	R. Claytor	11/20/14

TETRA TECH PROJECT NO. X9025.14.0066.000	DESCRIPTION	This photograph shows collection of sub-slab soil gas and indoor air samplers at Location 4 in the tavern.	10
	CLIENT	U. S. Environmental Protection Agency Region 7	Date
Direction: West	PHOTOGRAPHER	R. Claytor	11/20/14

APPENDIX C

CONSTRUCTION SOLUTIONS GEOPHYSICAL SURVEY REPORT

Monday, September 29, 2014

Phone: 913-879-2200
Fax:913-879-2213
Toll Free 800-514-5109
rnorland@construction-solutions.com

24564 Lackman Rd
Paola, KS 66071

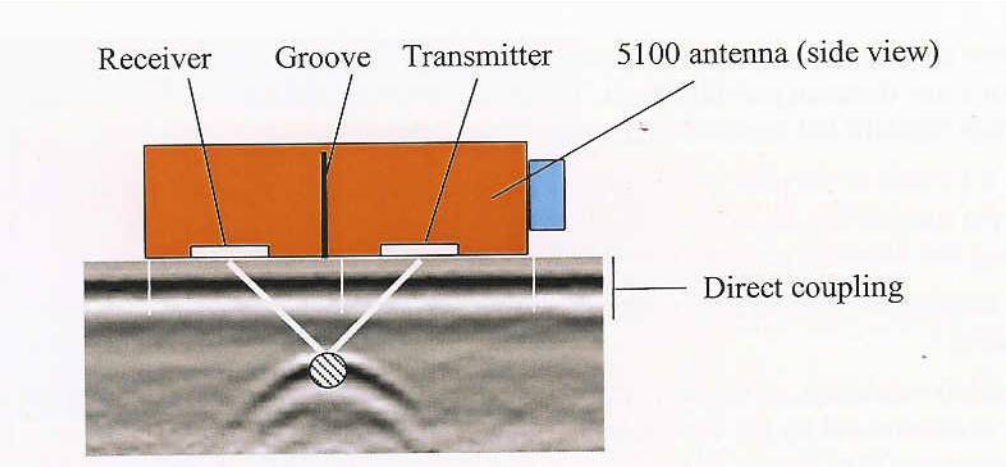
Tetra Tech
Ms. Lisa Wilson
415 Oak St
Kansas City, MO 64106

Executive Summary:

Construction Solutions performed a Ground Penetrating Radar (GPR) scan at 3930 Chouteau Ave, St. Louis, MO to locate any underground storage tanks (UST) using ground penetrating radar (GPR) and electromagnetic (EM) technologies. An area where UST's have been excavated was located and marked. The approximate centerline of removed tanks was marked out within the excavation perimeter and surveyed in for overlay onto Google Earth image of the site. EM data backed up GPR data indicating an area of excavation and fill.

GPR Information and Background:

GPR has been used extensively in the past for geological and archeological exploration and mapping; however, it has only been since 2001 that GPR had the capability to image shallow targets. The system used for this project has the ability to image targets to a depth of 15 feet with an accuracy of ± 2 inch. The 400 MHz antenna broadcasts a microwave energy pulse of less than 1/6th watt at a rate of 100 ns. This energy pulse is timed as it propagates through a material noting when a return pulse arrives. The time and strength of the return pulse is captured and analyzed and interpreted graphically. This process is shown in the figure of a 1500 MHz antenna below.



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Project Layout:

The site was surveyed in an approximate 5ft x 5ft X-Y grid with GPR as shown in Figure 1.

Figure 1

Project Results:

No UST's were detected on site. An area where UST's had most probably been excavated and removed was determined and marked out on site. GPR locates were noted and documented by optical survey. Approximate UST center lines were also marked as determined by GPR data and in field estimation by examining the excavation pit GPR data images. Figure 2 shows the results of our GPR survey overlaid onto a Google Earth image of the site.

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Figure 2

The dashed yellow line represents the extents of the excavation area. The dash/dot line represents the approximate centerline of removed UST's. GPR data indicated that there is residual piping left within the excavation area running parallel to the tank centerlines.

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Figure 3 is a GPR image of an excavated UST. We have shown the estimated location of the removed UST by a dashed circle.

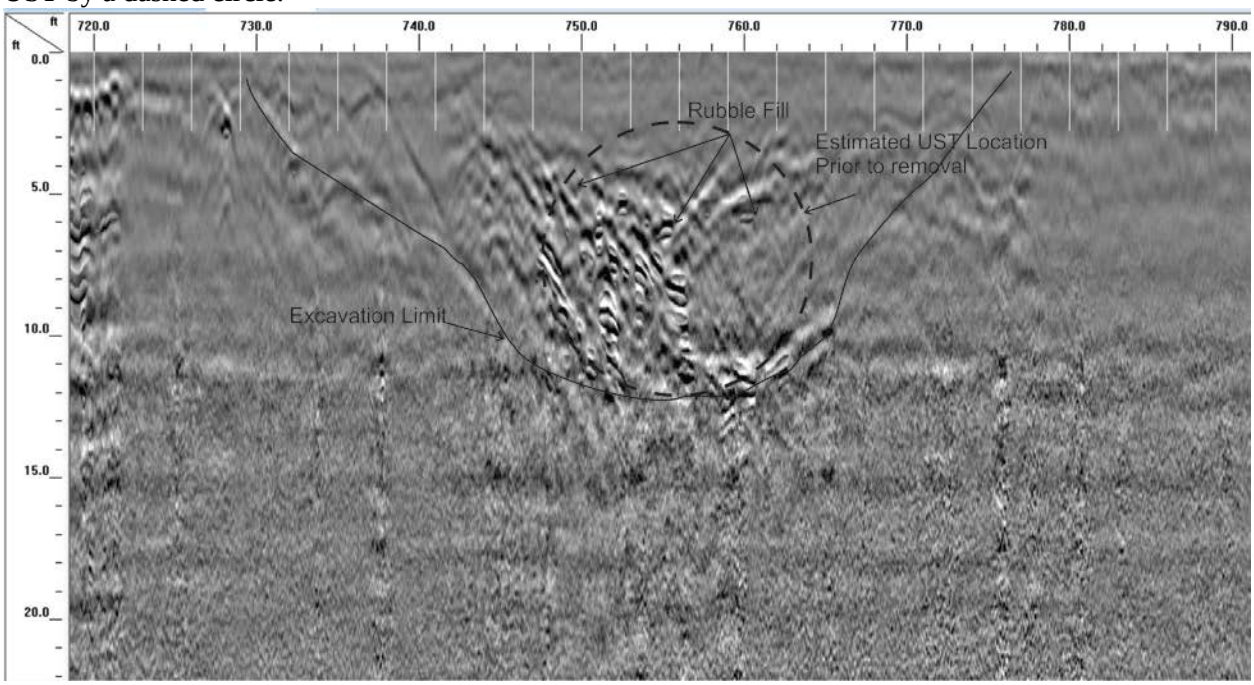

Figure 3

Figure 4 shows another GPR image of the excavation pit with possible piping located.

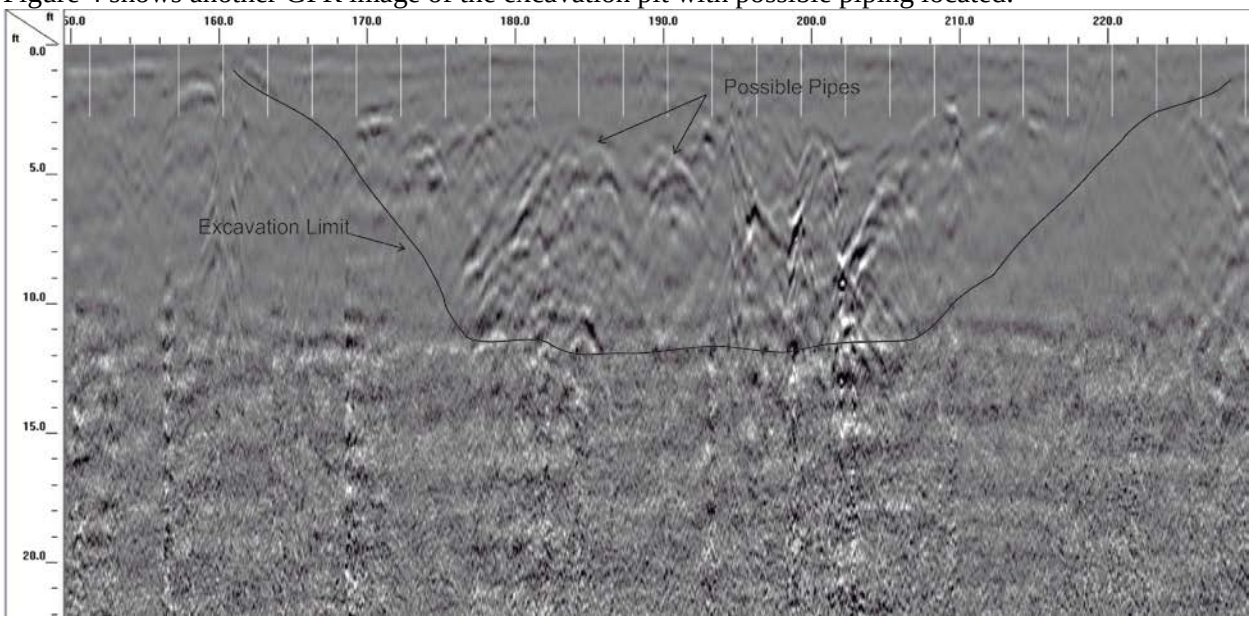

Figure 4

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EM Survey data corresponds with GPR data for the site indicating that there is no UST's present but that there is an area of disturbed soils within the GPR determined excavation perimeter. Figures 5 through 7 show Conductivity, In Phase, and Quadrature maps overlaid onto Google Earth images of the site.

200 Hz Conductivity Map

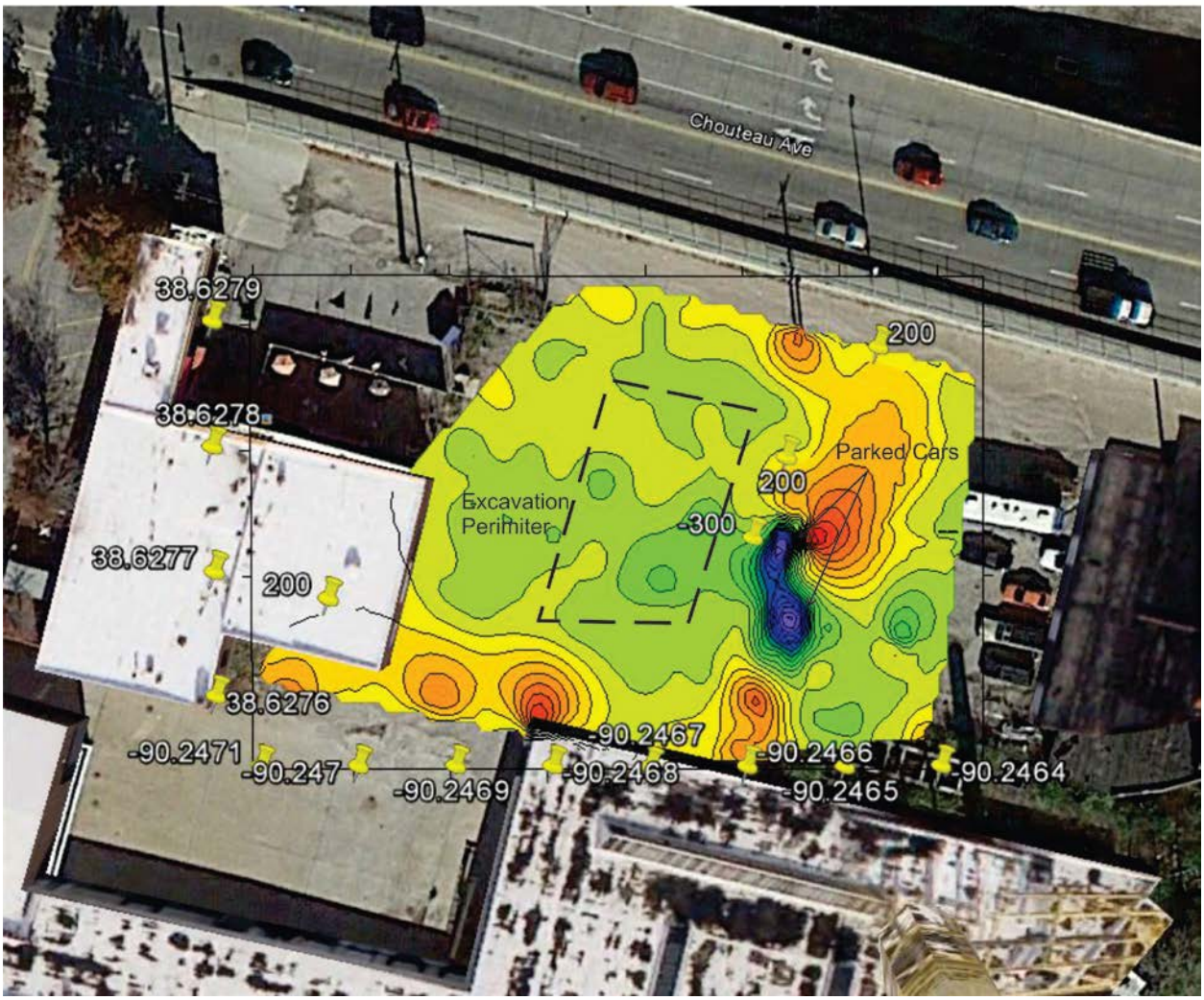

Figure 5

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2000 Hz In Phase Map

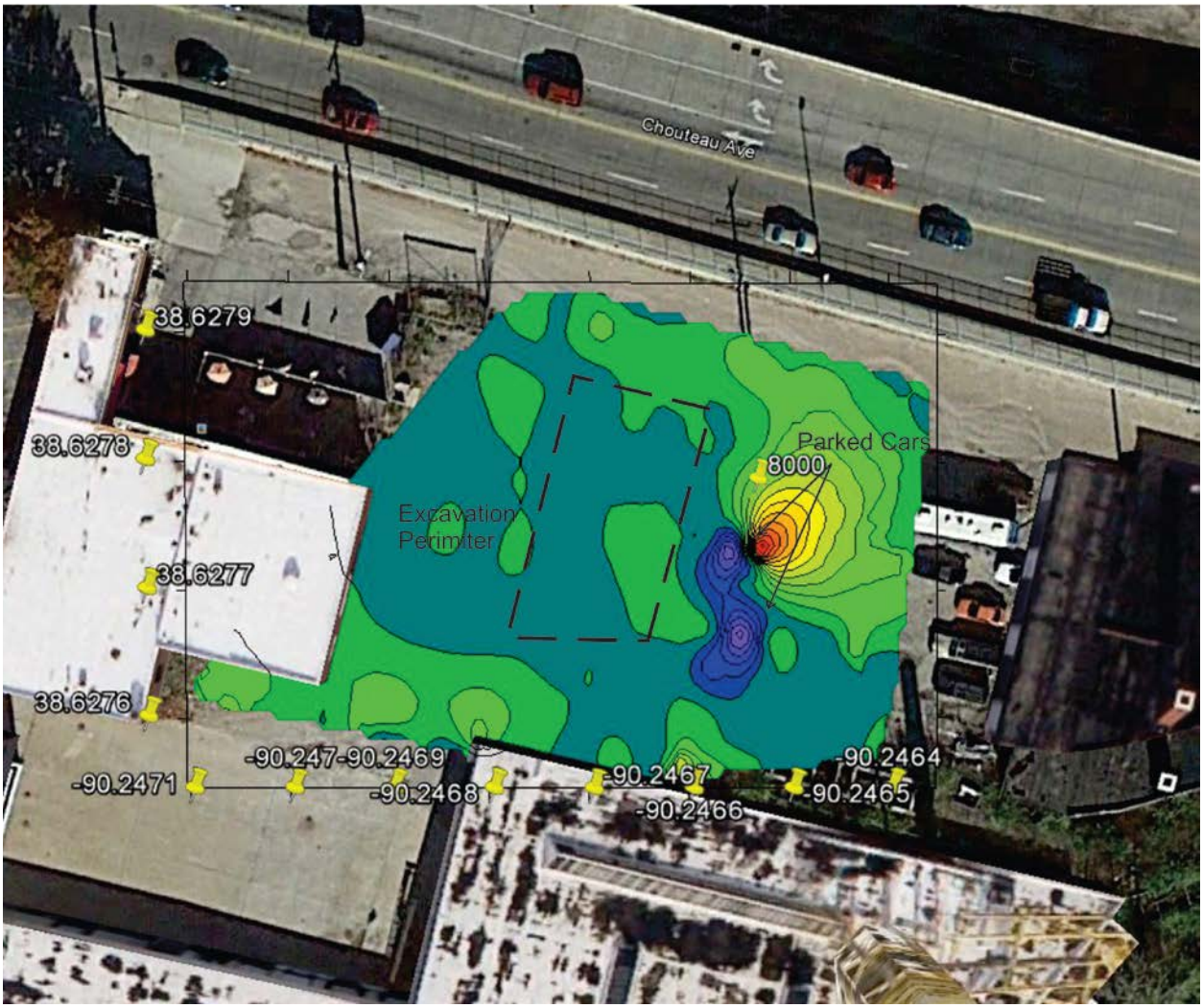

Figure 6

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2000 Hz Quadrature Map

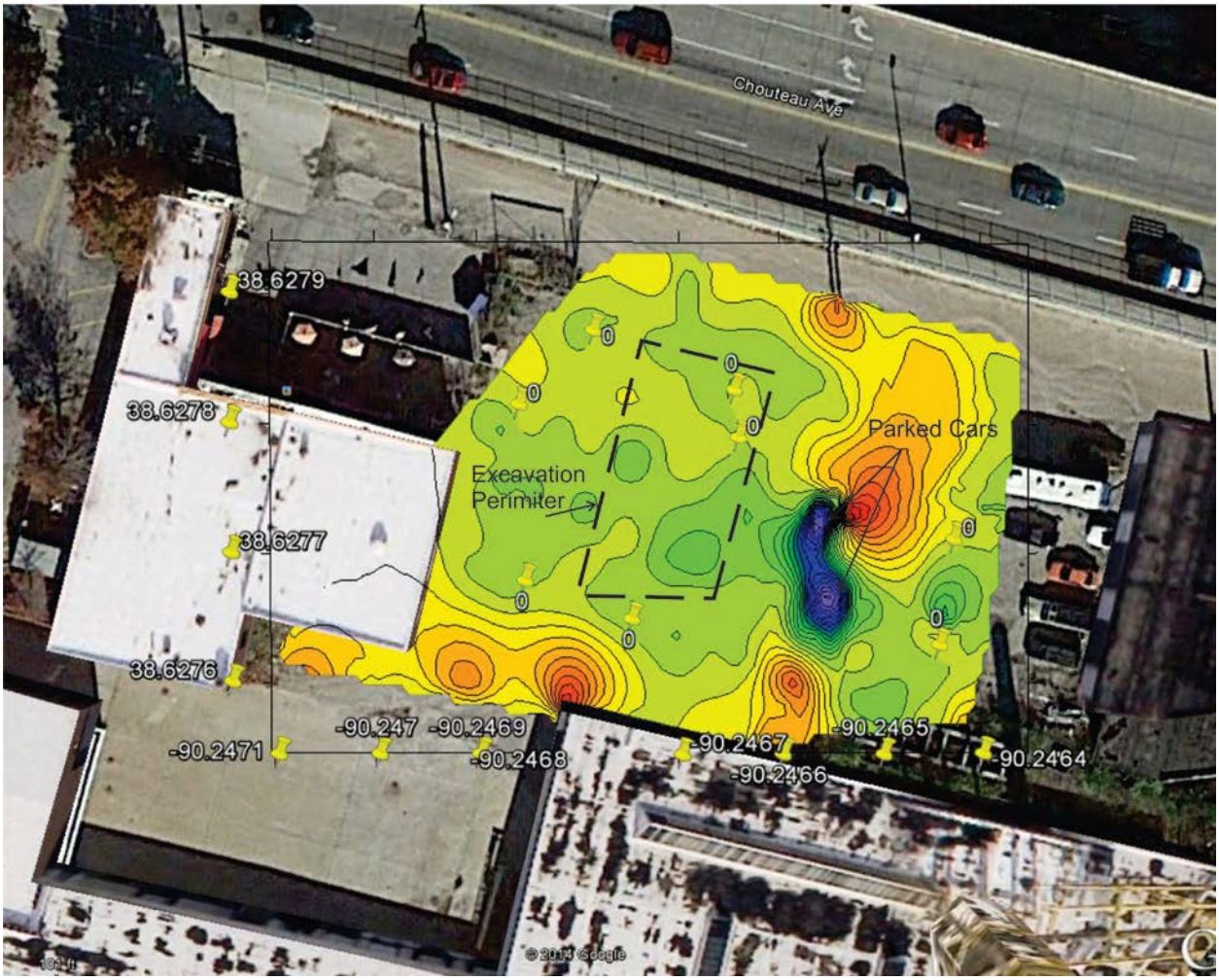

Figure 7

Individual EM data maps for Conductivity, In Phase, and Quadrature are shown in Figures 8 thru 10. For our EM equipment the system bandwidth extends from 1 kHz to 16 kHz in 1 kHz steps. The system's primary data output is In-Phase and Quadrature components of the mutual coupling field ratio (Q) of the primary transmitted field to the induced secondary field in parts per million at all frequencies. Our system has also been calibrated to provide the apparent conductivity at 15 kHz.

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2000 Hz Conductivity Map

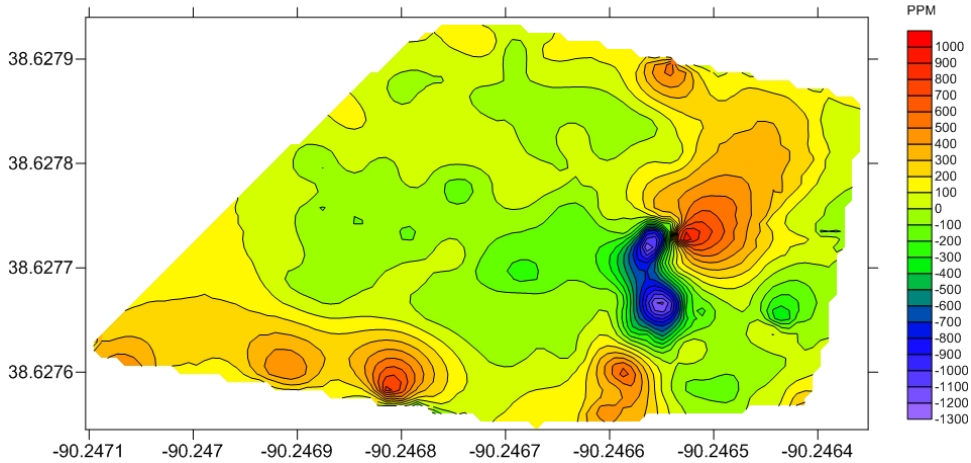

Figure 8

2000 Hz In Phase Map

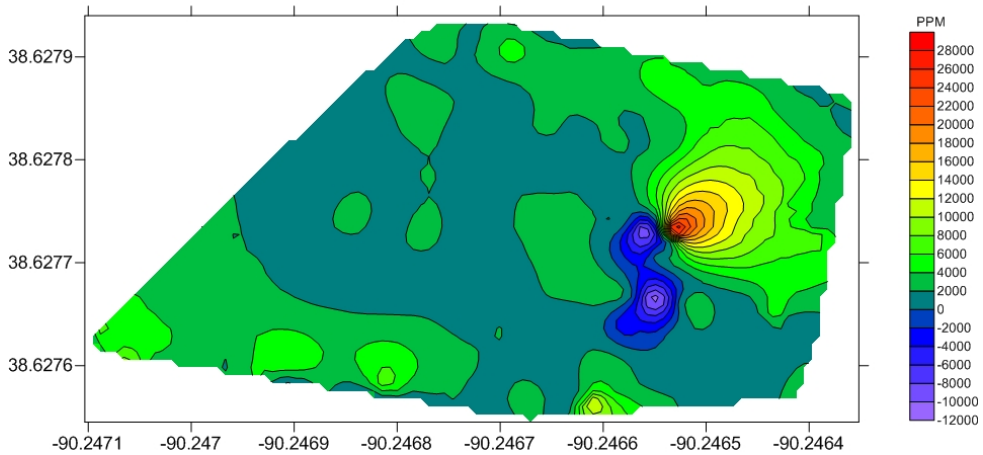

Figure 9

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2000 Hz Quadrature Map

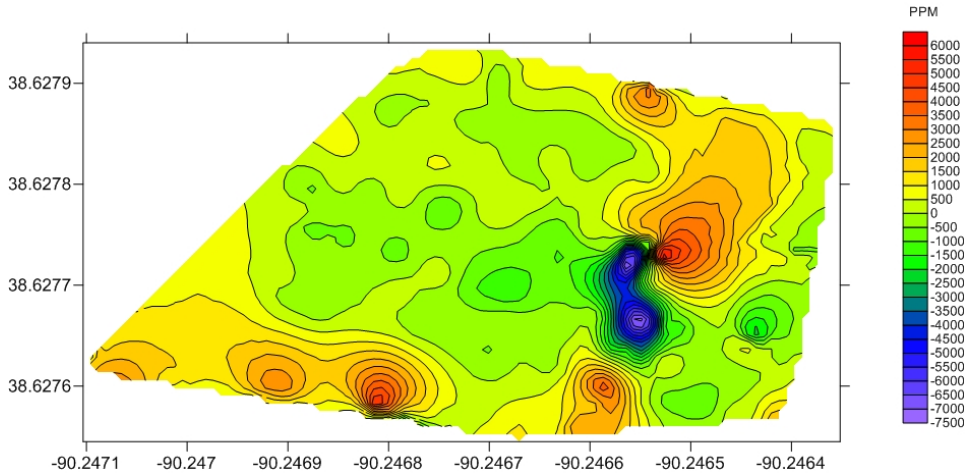

Figure 10

Conclusion:

GPR and EM surveys of the site indicate that there are no UST's present and with the exception of some rubble and possible piping all of the UST's that were on this site have been removed at some time in the past.

If you have any questions regarding this report please contact us at the numbers listed above.

Sincerely

Rick Norland P.E.
Construction Solutions

APPENDIX D

FIELD SHEETS AND CHAIN-OF-CUSTODY RECORDS

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
MIKE B DAVIS	INDEPENDENT PETROCHEMICAL	18-20 / 08 / 14	1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: 12 CUBITAINER	5 OZ BOTTLE	125 OZ BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6561-104		3			2		X				
6561-101		3			2		X				
6561-102		3			2		X				
6561-103		3			2		X				
6561-201						X					~~EXTRA VOLUME~~ MS 8/19/14
6561-202	2		4		6	X					EXTRA VOLUME
6561-105		3			5		X				EXTRA VOLUME
6561-106		3			2		X				
6561-107		3			2		X				
6561-108		3			2		X				
6561-109		3			2		X				
6561-110		3			2		X				
-111		3			2		X				
-112		3			2		X				
-113		3			2		X				
-114		3			2		X				
-115		3			2		X				
-115-FD		3			2		X				
-204	2		2		2	X					
-204-FD	2		2		2	X					
-215-FB					2	X					
-116		3			2		X				
-117		3			2		X				
-118		3			2		X				

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S): OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Laura Moore ☐ SEALED UNSEALED ☒	8/20/14	1030	[illegible] ☐ SEALED UNSEALED ☒	SHIPPING
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
MIKE B DAVIS	INDEPENDENT PETROCHEMICAL	18-20 / 08 / 14	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	8 OZ BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6561-119		3			2		X				
6561-119-FD		3			2		X				

ASK NOT COMPOSITE

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER _____

_____ COURIER

_____ SAMPLER CONVEYED _____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Laura Moore ☐ SEALED ☒ UNSEALED	8/20/14	1030	LDL ☐ SEALED ☒ UNSEALED	SHIPPING
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 104 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-104-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-1-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62750	**Sample Collection: Start:**	8/18/14	16:30
Longitude: -90.24609	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 101 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-101-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-1-0-3

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: 38.62750 **Sample Collection: Start:** 8/18/14 15:45
Longitude: -90.24609 **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 102 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-102-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-1 - 4-8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: 38.62750 **Sample Collection: Start:** 8/18/14 16:00
Longitude: -90.24609 **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 103 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-103-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: 60-1-8-10.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62750	**Sample Collection: Start:**	8/18/14	16:10
Longitude:	-90.24609	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 201 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-201-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-1-36

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/19/14 08:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
~~1 - 1 Liter Cubitainer~~	~~Field Filtered, HNO3 to pH<2~~	~~180~~	~~Days~~	~~1 Metals - Dissolved, in Water by ICP/MS~~
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 ~~- 40mL VOA vial~~	~~4 Deg C, HCL to pH<2~~	~~14~~	~~Days~~	~~1 TPH Volatiles in water by GC/MS~~

DM 8/20/14

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 202 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-202-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-2 -12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62764	**Sample Collection: Start:**	8/19/14	11:10
Longitude: -90.24644	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A) EXTRA VOLUME

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 105 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-105-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-2-0-3

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62764	**Sample Collection: Start:**	8/19/14	10:00
Longitude:	-90.24644	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) EXTRA VOLUME

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 106 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-106-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SD-2-4.8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62764	**Sample Collection: Start:**	8/19/14	10:25
Longitude: -90.24644	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 107 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-107-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: 50-2-8-10.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62764	**Sample Collection: Start:**	8/19/14	10:35
Longitude: -90.24644	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 108 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-108-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-3-0-3.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62762	**Sample Collection: Start:**	8/19/14	13:10
Longitude:	-90.24669	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 109 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-109-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-3-4-7

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62762	**Sample Collection: Start:**	8/19/14	13:15
Longitude: -90.24669	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 110 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-110-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-3-8-12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: 38.62762	**Sample Collection:**	**Start:**	8/19/14	13:20
Longitude: -90.24669		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 111 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-111-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-4-0-3

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62776	**Sample Collection: Start:**	8/14/14	14:40
Longitude: -90.24661	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of ~~TCLP~~ Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 112 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-112-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-4-4-7.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62776	**Sample Collection: Start:**	8/19/14	15:00
Longitude:	-90.24661	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 113 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-113-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-3-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62762	**Sample Collection: Start:**	8/19/14	13:25
Longitude: -90.24664	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 114 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-114-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SD-4- 8-12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62776	**Sample Collection: Start:**	8/19/14	15:15
Longitude:	-90.24601	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of ~~TCLP~~ Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 115 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-115-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-4-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: 38.62776 **Sample Collection: Start:** 8/19/14 15:30
Longitude: -90.24601 **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 204 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-204-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-4-9

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/19/14 17:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A) ACID REACTING WITH H_2O - BUBBLES IN VOAS

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

MM 8/19/14
204-FD

ASR Number: 6561 **Sample Number:** 213 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-~~213~~-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-4-9

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/19/14	17:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 215 **QC Code:** FB **Matrix:** Water **Tag ID:** 6561-215-FB

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: LDL VOA/TPH (OA-1) Trip Blank sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/19/14	18:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 116 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-116-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-5-0-4

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	38.62793	**Sample Collection: Start:**	8/24/14	09:10
Longitude:	-90.24671	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 117 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-117-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-5-4-8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: 38.62793
Longitude: -90.24471

Sample Collection: **Start:** 8/20/14 09:20
End: __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 118 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-118-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-5-8-12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62793	**Sample Collection: Start:**	8/20/14	09:40
Longitude: -90.24671	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

AM 8/20/14
119-FD

ASR Number: 6561 **Sample Number:** ~~143~~ #9 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-~~143~~-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SD-5-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62793	**Sample Collection: Start:**	8/20/14	0955
Longitude: -90.24671	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 119 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-119-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-S-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62793	**Sample Collection: Start:**	8/20/14	09:55
Longitude: -90.24671	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
MIKE B DAVIS	INDEPENDENT PETROCHEMICAL	20 / 08 / 14	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	8 OZ BOTTLE	128 OZ BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6561-120		3			2		X				
-121		3			2		X				
-122		3			2		X				
-123		3			2		X				
-124		3			2		X				
-125		3			2		X				
-126		3			2		X				
-205	2		2		2	X					
-127		3			2		X				
-128		3			2		X				
-206	2		2		2	X					
-207	2		2		2	X					
-214-FB	2		2		2	X					

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

*U.S. GPO: 2002-756-917/40053

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 120 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-120-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-6-0-1.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	14:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) LIMITED SAMPLE VOLUME

HIGH CONCENTRATION LIKELY

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 121 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-121-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

MM 8/20/14

Location Desc: SO-6-8-~~S~~ 12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/20/14 15:10
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) HIGH CONCENTRATION POSSIBLE

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 122 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-122-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-6-12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	15:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) HIGH CONCENTRATION POSSIBLE

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 123 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-123-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SD-7-0-4

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	15:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 124 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-124-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-7-4-8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	1600
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) EXTRA VOLUME

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 125 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-125-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-7-8-12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/20/14 16:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 126 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-126-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: ~~8~~ SO-7 · 12-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	16:~~45~~
Longitude: ___ ___ ___	**End:**	__/__/__	16:45 / __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 205 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-205-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-6-16

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/14	17:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 127 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-127-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SO-8-4-8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/21/14	08:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 128 **QC Code:** __ **Matrix:** Solid **Tag ID:** 6561-128-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: S0-8-8-11.5

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/24/14 10:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 206 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-206-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: SW-1

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/21/14 10:15
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A)

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 207 **QC Code:** __ **Matrix:** Water **Tag ID:** 6561-207-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: GW-8-12

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: 38.62153	**Sample Collection: Start:**	8/4/14	11:30
Longitude: -90.24707	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A) HCl REACTING WITH WATER. AIR BUBBLES PRESENT

Sample Collected By: LM/SET

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 214 **QC Code:** FB **Matrix:** Water **Tag ID:** 6561-214-FB

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Field Blank sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	08/21/14	09:30
End:	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	Field Filtered, HNO3 to pH<2	180	Days	1 Metals - Dissolved, in Water by ICP/MS
1 - 1 Liter Cubitainer	HNO3 to pH<2	180	Days	1 Metals in Water by ICP/MS
1 - 128oz amber glass	4 Deg C	7	Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7	Days	1 TPH Semi-volatile in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 TPH Volatiles in water by GC/MS

Sample Comments:

(N/A)

Sample Collected By: LM/SET

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
MIKE B. DAVIS	ASR 6561	27 / 08 / 14	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: SUMMA ~~6L CUBITAINER~~	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other AIR	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6561-1	1									X	
6561-2	1									X	
6561-3	1									X	
6561-4	1									X	
6561-4FD	1									X	
6561-5	1									X	
6561-6	1									X	
END OF SAMPLES											

ASR 6561 COMPLETE

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER _____

_____ COURIER

X SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
LPC ☐ SEALED ☐ UNSEALED X	8/28/14		☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

*U.S. GPO: 2002-756-917/40053

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-1-~~[illegible]~~ MD

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-1

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	8/27/14	07:37
End:	8/27/14	08:54

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start P = -27 psi
End = 0

Sample Collected By: ~~LM/SET~~ L. SENA

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 2 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-2-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-2

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	8/27/14	07:52
End:	8/27/14	08:56

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start Psi = 28
End = 0

Sample Collected By: ~~LM/SET~~ L. SENA

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 3 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-3-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-3

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	8/27/14	08:06
End:	8/27/__	08:58

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start Psi - 28
End 0

Sample Collected By: ~~LM/SET~~ L. SENA

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** 4 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-4-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-4

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/27/14	08:20
Longitude: ___ ___ ___	**End:**	8/27/14	09:24

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start psi - 26
End 0
[illegible]

Sample Collected By: ~~LM/SET~~ L. SENA

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** ~~5~~ 4FD **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-~~5~~-4FD

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-4FD

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/27/14	08:20
Longitude: ___ ___ ___	**End:**	8/27/14	09:24

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start psi - 30
End psi 0

Sample Collected By: ~~LM/SET~~ L. Sena

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** ~~1~~ 5 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-~~1~~ 5-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-5

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/27/14	08:47
Longitude: ___ ___ ___	**End:**	8/27/14	09:29

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start psi -29
End 0

Sample Collected By: ~~LM/SET~~ L. SENA

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6561 **Sample Number:** ~~8~~ 6 **QC Code:** __ **Matrix:** Air **Tag ID:** 6561-~~8~~ 6-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Air canister sample

External Sample Number: SSG-6

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	8/27/14	09:17
End:	8/27/14	09:41

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Start psi - 28
END 0

Sample Collected By: ~~LM/SET~~ L. SENA

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Mike Davis	TPC	20 / 11 / 2014	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	6L Canister BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other: Air	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
6681-1		1								✓	
6681-2		1								✓	
6681-3		1								✓	
6681-4		1								✓	
6681-5		1								✓	
6681-5FD		1								✓	

Nothing More to Follow

Complete

DESCRIPTION OF SHIPMENT

6 PIECE(S) CONSISTING OF 1 BOX(ES) crate

_____ ICE CHEST(S); OTHER _____ 11/21/14

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER _____

_____ COURIER

X SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
(SAMPLER) [signature] ☐ SEALED ☐ UNSEALED	11/21/14	0947	11/21/14 Nicole [signature] ☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-1-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Loc #5 Sub slab

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	11/20/14	07:44
End:	11/20/14	15:33

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 3028
Initial Pres. -30 "Hg
Final Pres 0 "Hg
In garage

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-1-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Loc #5 Co-located Indoor

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	11/20/14	07:45
End:	11/20/14	15:35

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 3234 In Garage
Initial Pres: -29 "Hg
Final Pres Ø "Hg

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 3 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-3-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Ambient Outside South of Garage

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

		Date	Time(24 hr)
Sample Collection:	**Start:**	11/20/14	07:47
	End:	11/20/14	15:40

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 4565

Initial Pres. 29" Hg
Final Pres 0" Hg

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-~~1~~ 4-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: ~~Ambient South of Garage~~ Loc #4 subslab

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	11/20/14	08:~~13~~ 12
Longitude: ___ ___ ___	**End:**	11/20/14	16:04

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 4565 3241

Initial Pres -29" Hg
End Pres 0" Hg
Dance Area of Bar

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-1-5

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Co-located w/ Loc #4 Indoor

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	11/20/14	08:13
End:	11/20/14	16:05

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 3029
Initial Pres -29 "Hg
End Pres. 0 "Hg
on table next to SS test

Sample Collected By: TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 6681 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 6681-~~1~~ 5-FD-__

Project ID: MBDB788 **Project Manager:** Mike B. Davis
Project Desc: Independent Petrochemical Corp. sampling
City: St. Louis **State:** Missouri
Program: Superfund
Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition **Site ID:** B788 **Site OU:** 00

Location Desc: Co. located w/ Loc #4

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___
Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	11/20/14	08:13
End:	11/20/14	16:06

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A) SN 3021
Initial Pres -29" Hg
End Pres: 0" Hg
On table next to S.S post

Sample Collected By: TT

APPENDIX E

ANALYTICAL RESULTS

United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: 09/24/2014

Subject: Transmittal of Sample Analysis Results for ASR #: 6561

Project ID: MBDB788

Project Description: Independent Petrochemical Corp. sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Mike B. Davis
SUPR/ERSB/PPSS

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Mike B. Davis Org: SUPR/ERSB/PPSS Phone: 913-551-7328

Project ID: MBDB788

Project Desc: Independent Petrochemical Corp. sampling

Location: St. Louis State: Missouri Program: Superfund

Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition Site ID: B788 Site OU: 00

GPRA PRC: 303DC6

Purpose: Site Characterization

Site Reassessment.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

ug/L = Micrograms per Liter
mg/L = Milligrams per Liter
ug/m3 = Micrograms per Cubic Meter
% = Percent
ug/kg = Micrograms per Kilogram
mg/kg = Milligrams per Kilogram

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
O = Parameter not analyzed.
J = The identification of the analyte is acceptable; the reported value is an estimate.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
U = The analyte was not detected at or above the reporting limit.

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	__	Air	SSG-1		08/27/2014	07:37	08/27/2014	08:54	08/28/2014
2	__	Air	SSG-2		08/27/2014	07:52	08/27/2014	08:56	08/28/2014
3	__	Air	SSG-3		08/27/2014	08:06	08/27/2014	08:58	08/28/2014
4	__	Air	SSG-4		08/27/2014	08:20	08/27/2014	09:24	08/28/2014
4	FD	Air	SSG-4		08/27/2014	08:20	08/27/2014	09:24	08/28/2014
5	__	Air	SSG-5		08/27/2014	08:47	08/27/2014	09:29	08/28/2014
6	__	Air	SSG-6		08/27/2014	09:17	08/27/2014	09:41	08/28/2014
101	__	Solid	SO-1, 0-3		08/18/2014	15:45			08/20/2014
102	__	Solid	SO-1, 4-8		08/18/2014	16:00			08/20/2014
103	__	Solid	SO-1, 8-10.5		08/18/2014	16:10			08/20/2014
104	__	Solid	SO-1, 12-16		08/18/2014	16:30			08/20/2014
105	__	Solid	SO-2, 0-3		08/19/2014	10:00			08/20/2014
106	__	Solid	SO-2, 4-8		08/19/2014	10:25			08/20/2014
107	__	Solid	SO-2, 8-10.5		08/19/2014	10:35			08/20/2014
108	__	Solid	SO-3, 0-3.5		08/19/2014	13:10			08/20/2014
109	__	Solid	SO-3, 4-7		08/19/2014	13:15			08/20/2014
110	__	Solid	SO-3, 8-12		08/19/2014	13:20			08/20/2014
111	__	Solid	SO-4, 0-3		08/19/2014	14:40			08/20/2014
112	__	Solid	SO-4, 4-7.5		08/19/2014	15:00			08/20/2014
113	__	Solid	SO-3, 12-16		08/19/2014	13:25			08/20/2014
114	__	Solid	SO-4, 8-12		08/19/2014	15:15			08/20/2014
115	__	Solid	SO-4, 12-16		08/19/2014	15:30			08/20/2014
115	FD	Solid	SO-4, 12-16		08/19/2014	15:30			08/20/2014
116	__	Solid	SO-5, 0-4		08/20/2014	09:10			08/20/2014
117	__	Solid	SO-5, 4-8		08/20/2014	09:20			08/20/2014
118	__	Solid	SO-5, 8-12		08/20/2014	09:40			08/20/2014
119	__	Solid	SO-5, 12-16		08/20/2014	09:55			08/20/2014
119	FD	Solid	SO-5, 12-16		08/20/2014	09:55			08/20/2014
120	__	Solid	SO-6, 0-1.5		08/20/2014	14:50			08/22/2014
121	__	Solid	SO-6, 8-12		08/20/2014	15:10			08/22/2014
122	__	Solid	SO-6, 12-16		08/20/2014	15:25			08/22/2014
123	__	Solid	SO-7, 0-4		08/20/2014	15:50			08/22/2014
124	__	Solid	SO-7, 4-8		08/20/2014	16:00			08/22/2014
125	__	Solid	SO-7, 8-12		08/20/2014	16:30			08/22/2014
126	__	Solid	SO-7, 12-16		08/20/2014	16:45			08/22/2014
127	__	Solid	SO-8, 4-8		08/21/2014	08:55			08/22/2014
128	__	Solid	SO-8, 8-11.5		08/21/2014	10:00			08/22/2014
201	__	Water	GW-1-36		08/19/2014	08:45			08/20/2014
202	__	Water	GW-2-12		08/19/2014	11:10			08/20/2014
204	__	Water	GW-4-9		08/19/2014	17:30			08/20/2014
204	FD	Water	GW-4-9		08/19/2014	17:30			08/20/2014
205	__	Water	GW-6-16		08/20/2014	17:30			08/22/2014
206	__	Water	SW-1		08/21/2014	10:15			08/22/2014
207	__	Water	GW-8-12		08/21/2014	11:30			08/22/2014

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
214	- FB	Water	Field Blank sample		08/21/2014	09:30			08/22/2014
215	- FB	Water	LDL VOA/TPH (OA-1) Trip Blank sample		08/19/2014	18:00			08/20/2014

Analysis	Comments About Results For This Analysis

1 VOCs in Air at Ambient Levels by GC/MS

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.4G

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 5-__ 6-__

Comments:
Dilutions were necessary in order to obtain valid results due to matrix interferences for samples 4, 4-fd, 5 and 6. This increased the reporting limits by a factor of 10 for these samples.

Acetone and Vinyl Acetate were J-coded in sample 3. Although the analytes in question have been positively identified in the sample, the quantitations are estimates (J-coded) due to poor precision obtained for these analytes in the laboratory duplicate sample.

1 Percent Solid

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.9G

Basis: N/A

Samples: 101-__ 102-__ 103-__ 104-__ 105-__ 106-__ 107-__
108-__ 109-__ 110-__ 111-__ 112-__ 113-__ 114-__
115-__ 115-FD 116-__ 117-__ 118-__ 119-__ 119-FD
120-__ 121-__ 122-__ 123-__ 124-__ 125-__ 126-__
127-__ 128-__

Comments:
(N/A)

1 Semi-Volatile Organic Compounds in Soil

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples: 101-__ 102-__ 103-__ 104-__ 105-__ 106-__ 107-__
108-__ 109-__ 110-__ 111-__ 112-__ 113-__ 114-__
115-__ 115-FD 116-__ 117-__ 118-__ 119-__ 119-FD
120-__ 121-__ 122-__ 123-__ 124-__ 125-__ 126-__
127-__ 128-__

Comments:
Sample -120 was reported at a dilution (5X), therefore, has elevated reporting limits.

Benzo(k)fluoranthene in sample -123 was J-coded. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to the reported value exceeding the calibrated range of the instrument and diluted out in further dilutions.

Analysis Comments About Results For This Analysis

Acetophenone was J-coded in sample -123. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of a surrogate analyte (nitrobenzene-d5: 142% vs 16-103%) in this sample. The actual concentration for this analyte may be lower than the reported value.

Fluoranthene, pyrene, benzo(a)anthracene, and chrysene were J-coded in sample -127. Although the analytes in question have been positively identified in the sample, the quantitations are an estimate (J-coded) due to low recovery of a surrogate analyte (pyrene-d10: 47% vs 51-120%) in this sample. The actual concentrations for these analytes may be higher than the reported values.

Pyrene was J-coded in sample -101. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to low recovery of this analyte (pyrene: 24% vs 35-142%) in the laboratory matrix spike. The actual concentration for this analyte may be higher than the reported value.

Acenaphthene and pyrene were J-coded in sample -101. Although the analytes in question have been positively identified in the sample, the quantitations are an estimate (J-coded) due to poor precision obtained for these analytes (acenaphthene: 51% vs 19% and pyrene: 119% vs 36%) in the laboratory matrix spike and matrix spike duplicate.

1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples:	101-__	102-__	103-__	104-__	105-__	106-__	107-__
	108-__	109-__	110-__	111-__	112-__	113-__	114-__
	115-__	115-FD	116-__	117-__	118-__	119-__	119-FD
	120-__	121-__	122-__	123-__	124-__	125-__	126-__
	127-__	128-__					

Comments:

Silver in samples -101 through -128 was UJ-coded. This analyte was not found in the samples at or above the reporting limits, however, the reporting limits are an estimate (UJ-coded) due to negative recoveries of this analyte in the interference check samples (ICS) which was not present in the ICS solution but whose absolute values were greater than the method detection limits (MDL), therefore, a possibility of false negatives exists. The actual reporting limits may be higher than the reported values.

Silver was UJ-coded in sample -101. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of this analyte (Ag: 73% vs 75-125%) in the laboratory matrix spike. The actual reporting limit for this analyte may be higher than the reported value.

Arsenic and cadmium were J-coded in sample -101. Although the analytes in question have been positively identified in the sample, the quantitations are an estimate (J-coded) due to low recoveries of these analytes (As: 32% and Cd: 72% vs 75-125%) in the

Analysis Comments About Results For This Analysis

laboratory matrix spike. The actual concentration for these analytes may be higher than the reported values.

Cadmium in sample -128 was J-coded. Although the analyte in question has been positively identified in this sample, the quantitation is an estimate (J-coded) due to the serial dilution percent difference being above the control limits (Cd: 29.9% vs 15%). The actual concentration for cadmium may be lower than the reported value.

1 TPH Semi-Volatile in Soil by GC/FID

Lab: RASP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3270.1F (see comments)

Basis: Dry

Samples:	101-__	102-__	103-__	104-__	105-__	106-__	107-__
	108-__	109-__	110-__	111-__	112-__	113-__	114-__
	115-__	115-FD	116-__	117-__	118-__	119-__	119-FD
	120-__	121-__	122-__	123-__	124-__	125-__	126-__
	127-__	128-__					

Comments:
Surrogate recovery for samples 6561-110 (238%), 6561-126 (138%), and 6561-128 (138%) was above the upper control limit of 125%. Extractable TPH was J-coded in samples 6561-110, 6561-126, & 6561-128.. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of a surrogate analyte in this sample. The actual concentration for this analyte may be lower than the reported value.

1 TPH Volatiles in Soil by GC/MS

Lab: RASP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3230.19C (see comments)

Basis: Dry

Samples:	101-__	102-__	103-__	104-__	105-__	106-__	107-__
	108-__	109-__	110-__	111-__	112-__	113-__	114-__
	115-__	115-FD	116-__	117-__	118-__	119-__	119-FD
	120-__	121-__	122-__	123-__	124-__	125-__	126-__
	127-__	128-__					

Comments:
(N/A)

1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.16E

Basis: Dry

Analysis Comments About Results For This Analysis

Samples: 101-__ 102-__ 103-__ 104-__ 105-__ 106-__ 107-__
108-__ 109-__ 110-__ 111-__ 112-__ 113-__ 114-__
115-__ 115-FD 116-__ 117-__ 118-__ 119-__ 119-FD
120-__ 121-__ 122-__ 123-__ 124-__ 125-__ 126-__
127-__ 128-__

Comments:
Dilutions were necessary in order to obtain valid results due to matrix interferences. The reporting limits were elevated 5 times due to dilutions in samples 110, 113, 115, 115-fd, 125 and 126; 25 times in sample 127; 50 times in samples 102, 103, 106, 122, 124 and 128; 100 times in samples 120 and 123; and 250 times in sample 105.

Slight 4-Methyl-2-pentanone contamination was found in the laboratory method blank. Only samples containing this analyte at a level greater than ten times the contamination level of the blank are reported without being qualified. All samples that contained this analyte but at a level less than ten times the contamination in the blank have the result U-coded indicating that the reporting limit has been raised to the level found in the sample. The only affected sample was 111.

Acetone was J-coded in samples 111, 112, 114, 116 and 117. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for this analyte may be higher than the reported value.

Acetone was UJ-coded in samples 109, 110, 113, 115, and 115-fd. 2-Hexanone was UJ-coded in samples 109-117 and 115-fd. Bromomethane was UJ-coded in samples 102, 103, 105, 106, 118, 119, 119-fd, 120, 121, 123 and 127. These analytes were not found in the samples at or above the reporting limits, however, the reporting limits are estimates (UJ-coded) due to the continuing calibration checks not meeting accuracy specifications. The actual reporting limits for these analytes may be higher than the reported values.

Acetone was UJ-coded in samples 120, 123 and 127. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of this analyte in the laboratory control sample. The actual reporting limit for this analyte may be higher than the reported value.

2-Butanone, Methylcyclohexane and Toluene were J-coded in sample 116. Benzene, Cyclohexane, Ethyl Benzene, Isopropylbenzene and Methylcyclohexane were J-coded in sample 126. Although the analytes in question have been positively identified in the samples, the quantitations are estimates (J-coded) due to poor precision obtained for these analytes in the laboratory duplicate samples.

1 Metals - Dissolved, in Water by ICP/MS

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB

Comments:

Analysis	Comments About Results For This Analysis

1 Metals in Water by ICP/MS

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 201-__ 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB

Comments:
Arsenic, chromium, and selenium were J-coded in sample -207. Although the analytes in question have been positively identified in the sample, the quantitations are an estimate (J-coded) due to high internal standard response (45Sc: 174% vs 60-125%). The actual concentrations for these analytes may be higher than the reported values.

1 Semi-Volatile Organic Compounds in Water

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 201-__ 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB

Comments:
Samples -204FD and -205 were reported at dilutions (2X and 5X, respectively), therefore, have elevated reporting limits.

Benzo(b)fluoranthene, benzo(k)fluranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene were UJ-coded in sample -206. These analytes were not found in the sample at or above the reporting limits, however, the reporting limits are an estimate (UJ-coded) due to low recovery of the surrogate analyte (benzo(a)pyrene-d12: 18% vs 32-121%). The actual reporting limits for these analytes may be higher than the reported values.

Pentachlorophenol in sample -204FD and benzo(g,h,i)perylene in samples -204FD and -205 were UJ-coded. These analytes were not found in the samples at or above the reporting limits, however, the reporting limits are an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications (%D for pentachlorophenol (-27.2%) and benzo(g,h,i)perylene (-25.3%) vs 25%). The actual reporting limits for these analytes may be higher than the reported values.

Pentachlorophenol was J-coded in sample -205. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications (%D for pentachlorophenol: -27.2% vs 25%). The actual concentration for this analyte may be higher than the reported value.

1 TPH Semi-volatile in Water by GC/FID

Lab: RASP Contract Lab (Out-Source)

Analysis	Comments About Results For This Analysis

Method: Similar to EPA Region 7 RLAB Method 3270.1F (see comments)

Samples: 201-__ 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB

Comments:
(N/A)

1 TPH Volatiles in water by GC/MS

Lab: RASP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3230.19C (see comments)

Samples: 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB 215-FB

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3230.13E

Samples: 201-__ 202-__ 204-__ 204-FD 205-__ 206-__ 207-__ 214-FB 215-FB

Comments:
Several samples had significant amounts of sediment in the VOA vials. When dilutions were made, samples exhibited a strong solvent/gasoline smell. Many vials had air bubbles. As there were enough unaffected vials, no additional coding was needed.

Several samples had high levels of analytes and TICs. These compounds affected the instrumentation and, therefore, the QC.

Naphthalene was above the calibration range in samples 202 and 205. The values have been reported with a J-code to indicate that they are estimates. They were not reported from the dilutions, due to issues with contamination.

Acetone, 2-Butanone, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane, 2-Hexanone, 1,1,2,2-Tetrachloroethane and 1,2-Dibromo-3-Chloropropane were reported as NA/O in sample 202, as there was significant interference from the TICs (Tentatively Identified Compounds), and the presence of these compounds could not be determined in the matrix spike and spike duplicate.

Acetone was J-coded in sample 201. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for this analyte may be higher than the reported value.

Cis-1,2-Dichoroethene was J-coded in samples 201 and 205. Although the analytes in question have been positively identified in the samples, the quantitation is an estimate (J-

Analysis	Comments About Results For This Analysis

coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for these analytes may be higher than the reported value.

Chlorobenzene, Chloroethane and Toluene were J-coded in sample 202. Although the analytes in question have been positively identified in the sample, the quantitation is an estimate (J-coded) due to low recovery of these analytes in the laboratory matrix spike. The actual concentration for these analytes may be higher than the reported value.

Carbon Tetrachloride, Chloromethane, Methyl Acetate and Trichloroethene were UJ-coded in sample 202. These analytes were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of these analytes in the laboratory matrix spike. The actual reporting limit for these analytes may be higher than the reported value.

Benzene, Bromomethane, Carbon Disulfide, Chloroform, Cyclohexane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, Methyl tert-butyl ether, Methylene Chloride, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane and Vinyl Chloride were UJ-coded in sample 202. These analytes were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for these analytes in the laboratory matrix spike and matrix spike duplicate. The actual reporting limit for these analytes may be higher than the reported value.

Isopropylbenzene was J-coded in sample 202. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	65	4.2	6.0 J	4.7 U
Allyl Chloride	ug/m3	0.66 U	0.66 U	0.66 U	6.6 U
Benzene	ug/m3	2.4	0.68 U	0.68 U	6.8 U
Benzyl Chloride	ug/m3	1.0 U	1.0 U	1.0 U	10 U
Bromodichloromethane	ug/m3	1.3 U	1.3 U	1.3 U	13 U
Bromoform	ug/m3	2.2 U	2.2 U	2.2 U	22 U
Bromomethane	ug/m3	0.84 U	0.84 U	0.84 U	8.4 U
1,3-Butadiene	ug/m3	0.45 U	0.45 U	0.45 U	4.5 U
2-Butanone	ug/m3	4.2	0.89	1.0	5.8 U
Carbon Disulfide	ug/m3	0.64 U	0.64 U	0.71	6.4 U
Carbon Tetrachloride	ug/m3	1.3 U	1.6	2.0	15
Chlorobenzene	ug/m3	0.99 U	0.99 U	0.99 U	9.9 U
Chloroethane	ug/m3	0.57 U	0.57 U	0.57 U	5.7 U
Chloroform	ug/m3	1.4	3.3	5.5	460
Chloromethane	ug/m3	1.4	0.44 U	0.44 U	4.4 U
Cyclohexane	ug/m3	14	2.7	32	61
Dibromochloromethane	ug/m3	1.8 U	1.8 U	1.8 U	18 U
1,2-Dibromoethane	ug/m3	1.7 U	1.7 U	1.7 U	17 U
1,2-Dichlorobenzene	ug/m3	1.3 U	1.3 U	1.3 U	13 U
1,3-Dichlorobenzene	ug/m3	1.3 U	1.3 U	1.3 U	13 U
1,4-Dichlorobenzene	ug/m3	7.1	1.3 U	1.3 U	13 U
Dichlorodifluoromethane	ug/m3	16	1.1 U	13	11
1,1-Dichloroethane	ug/m3	2.1	1.1	0.84 U	69000
1,2-Dichloroethane	ug/m3	0.85 U	0.85 U	0.85 U	8.5 U
1,1-Dichloroethene	ug/m3	0.80 U	0.80 U	0.80 U	44
cis-1,2-Dichloroethene	ug/m3	0.84 U	0.84 U	0.84 U	240
trans-1,2-Dichloroethene	ug/m3	0.83 U	0.83 U	0.83 U	12
1,2-Dichloropropane	ug/m3	0.98 U	0.98 U	0.98 U	9.8 U
cis-1,3-Dichloropropene	ug/m3	0.96 U	0.96 U	0.96 U	9.6 U
trans-1,3-Dichloropropene	ug/m3	1.0 U	1.0 U	1.0 U	10 U
1,2-Dichlorotetrafluoroethane	ug/m3	1.5 U	1.5 U	1.5 U	15 U
1,4-Dioxane	ug/m3	0.71 U	0.71 U	0.71 U	7.1 U
Ethyl Acetate	ug/m3	2.8	1.1 U	1.1 U	11 U
Ethyl Benzene	ug/m3	2.0	0.93 U	0.93 U	9.3 U
4-Ethyltoluene	ug/m3	2.2	1.1 U	1.1 U	11 U
Heptane	ug/m3	3.5	0.89 U	0.89 U	8.9 U
Hexachlorobutadiene	ug/m3	2.1 U	2.1 U	2.1 U	21 U
Hexane	ug/m3	9.0	0.76 U	0.76 U	7.6 U
2-Hexanone	ug/m3	0.80 U	0.80 U	0.80 U	8.0 U
Methyl tert-butyl ether	ug/m3	0.77 U	0.77 U	0.77 U	7.7 U
Methylene Chloride	ug/m3	2.8	0.71 U	0.71 U	8.6
4-Methyl-2-Pentanone	ug/m3	0.81 U	0.81 U	0.81 U	8.1 U
2-Propanol	ug/m3	14	0.45 U	0.45 U	4.5 U
Propene	ug/m3	3.6	0.38 U	0.38 U	5.2
Styrene	ug/m3	1.1	0.91 U	0.91 U	9.1 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1,1,2,2-Tetrachloroethane	ug/m3	1.5 U	1.5 U	1.5 U	15 U
Tetrachloroethene	ug/m3	7.4	210	330	140000
Tetrahydrofuran	ug/m3	0.57 U	0.57 U	0.57 U	5.7 U
Toluene	ug/m3	57	0.80 U	0.80 U	8.0 U
1,2,4-Trichlorobenzene	ug/m3	1.5 U	1.5 U	1.5 U	15 U
1,1,1-Trichloroethane	ug/m3	1.1 U	70	16	2400
1,1,2-Trichloroethane	ug/m3	1.2 U	1.2 U	1.2 U	12 U
Trichloroethene	ug/m3	1.2	1.1 U	87	28000
Trichlorofluoromethane	ug/m3	12	2.3	2.3	12 U
1,1,2-Trichlorotrifluoroethane	ug/m3	1.5 U	1.5 U	1.5 U	15 U
1,2,4-Trimethylbenzene	ug/m3	3.4	1.1 U	1.1 U	11
1,3,5-Trimethylbenzene	ug/m3	1.0	1.0 U	1.0 U	10 U
2,2,4-Trimethylpentane	ug/m3	2.8	1.0 U	1.0 U	10 U
Vinyl Acetate	ug/m3	1.5	0.72 U	1.0 J	7.2 U
Vinyl Bromide	ug/m3	0.96 U	0.96 U	0.96 U	9.6 U
Vinyl Chloride	ug/m3	0.55 U	0.55 U	0.55 U	5.5 U
m and/or p-Xylene	ug/m3	6.5	1.9 U	1.9 U	19 U
o-Xylene	ug/m3	2.3	0.94 U	0.94 U	9.4 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	101-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	4.7 U	4.7 U	4.7 U	
Allyl Chloride	ug/m3	6.6 U	6.6 U	6.6 U	
Benzene	ug/m3	6.8 U	110	6.8 U	
Benzyl Chloride	ug/m3	10 U	10 U	10 U	
Bromodichloromethane	ug/m3	13 U	13 U	13 U	
Bromoform	ug/m3	22 U	22 U	22 U	
Bromomethane	ug/m3	8.4 U	8.4 U	8.4 U	
1,3-Butadiene	ug/m3	4.5 U	4.5 U	4.5 U	
2-Butanone	ug/m3	5.8 U	5.8 U	5.8 U	
Carbon Disulfide	ug/m3	6.4 U	6.4 U	6.4 U	
Carbon Tetrachloride	ug/m3	18	13 U	13 U	
Chlorobenzene	ug/m3	9.9 U	39	9.9 U	
Chloroethane	ug/m3	5.7 U	5.7 U	5.7 U	
Chloroform	ug/m3	560	10 U	10 U	
Chloromethane	ug/m3	4.4 U	4.4 U	4.4 U	
Cyclohexane	ug/m3	57	6800	7.4 U	
Dibromochloromethane	ug/m3	18 U	18 U	18 U	
1,2-Dibromoethane	ug/m3	17 U	17 U	17 U	
1,2-Dichlorobenzene	ug/m3	13 U	13 U	13 U	
1,3-Dichlorobenzene	ug/m3	13 U	13 U	13 U	
1,4-Dichlorobenzene	ug/m3	13 U	13 U	13 U	
Dichlorodifluoromethane	ug/m3	12	11 U	11 U	
1,1-Dichloroethane	ug/m3	83000	630	13	
1,2-Dichloroethane	ug/m3	8.5 U	19	8.5 U	
1,1-Dichloroethene	ug/m3	54	55	8.0 U	
cis-1,2-Dichloroethene	ug/m3	300	1300	8.4 U	
trans-1,2-Dichloroethene	ug/m3	15	140	8.3 U	
1,2-Dichloropropane	ug/m3	9.8 U	9.8 U	9.8 U	
cis-1,3-Dichloropropene	ug/m3	9.6 U	9.6 U	9.6 U	
trans-1,3-Dichloropropene	ug/m3	10 U	10 U	10 U	
1,2-Dichlorotetrafluoroethane	ug/m3	15 U	15 U	15 U	
1,4-Dioxane	ug/m3	7.1 U	7.1 U	7.1 U	
Ethyl Acetate	ug/m3	11 U	11 U	11 U	
Ethyl Benzene	ug/m3	9.3 U	9.9	9.3 U	
4-Ethyltoluene	ug/m3	11 U	11 U	11 U	
Heptane	ug/m3	8.9 U	46	8.9 U	
Hexachlorobutadiene	ug/m3	21 U	21 U	21 U	
Hexane	ug/m3	7.6 U	880	7.6 U	
2-Hexanone	ug/m3	8.0 U	8.0 U	8.0 U	
Methyl tert-butyl ether	ug/m3	7.7 U	7.7 U	7.7 U	
Methylene Chloride	ug/m3	9.8	7.1 U	7.1 U	
4-Methyl-2-Pentanone	ug/m3	8.1 U	8.1 U	8.1 U	
2-Propanol	ug/m3	4.5 U	4.5 U	4.5 U	
Propene	ug/m3	6.2	110	3.8 U	
Styrene	ug/m3	9.1 U	9.1 U	9.1 U	

Analysis/ Analyte	Units	4-FD	5-__	6-__	101-__
1,1,2,2-Tetrachloroethane	ug/m3	15 U	15 U	15 U	
Tetrachloroethene	ug/m3	160000	1500	570	
Tetrahydrofuran	ug/m3	5.7 U	5.7 U	5.7 U	
Toluene	ug/m3	8.0 U	14	8.0 U	
1,2,4-Trichlorobenzene	ug/m3	15 U	15 U	15 U	
1,1,1-Trichloroethane	ug/m3	3300	11 U	17	
1,1,2-Trichloroethane	ug/m3	12 U	12 U	12 U	
Trichloroethene	ug/m3	37000	1700	78	
Trichlorofluoromethane	ug/m3	12 U	12 U	12 U	
1,1,2-Trichlorotrifluoroethane	ug/m3	15 U	15 U	15 U	
1,2,4-Trimethylbenzene	ug/m3	12	36	11 U	
1,3,5-Trimethylbenzene	ug/m3	10 U	11	10 U	
2,2,4-Trimethylpentane	ug/m3	10 U	7400	10 U	
Vinyl Acetate	ug/m3	7.2 U	7.2 U	7.2 U	
Vinyl Bromide	ug/m3	9.6 U	9.6 U	9.6 U	
Vinyl Chloride	ug/m3	5.5 U	1400	5.5 U	
m and/or p-Xylene	ug/m3	19 U	19 U	19 U	
o-Xylene	ug/m3	9.4 U	9.4 U	9.4 U	
1 Percent Solid					
Solids, percent	%				87.5
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg				320 J
Acenaphthylene	ug/kg				2900
Acetophenone	ug/kg				190 U
Anthracene	ug/kg				2600
Atrazine	ug/kg				190 U
Benzaldehyde	ug/kg				190 U
Benzo(a)anthracene	ug/kg				5200
Benzo(a)pyrene	ug/kg				9100
Benzo(b)fluoranthene	ug/kg				14000
Benzo(g,h,i)perylene	ug/kg				11000
Benzo(k)fluoranthene	ug/kg				10000
Biphenyl	ug/kg				190 U
bis(2-Chloroethoxy)methane	ug/kg				190 U
bis(2-Chloroethyl)ether	ug/kg				190 U
bis(2-Ethylhexyl)phthalate	ug/kg				440
4-Bromophenyl-phenylether	ug/kg				190 U
Butylbenzylphthalate	ug/kg				190 U
Caprolactam	ug/kg				190 U
Carbazole	ug/kg				490
4-Chloro-3-methylphenol	ug/kg				190 U
4-Chloroaniline	ug/kg				190 U
2-Chloronaphthalene	ug/kg				190 U
2-Chlorophenol	ug/kg				190 U
4-Chlorophenyl-phenylether	ug/kg				190 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	101-__
Chrysene	ug/kg				6300
Di-n-butylphthalate	ug/kg				190 U
Di-n-octylphthalate	ug/kg				190 U
Dibenz(a,h)anthracene	ug/kg				3900
Dibenzofuran	ug/kg				320
3,3'-Dichlorobenzidine	ug/kg				190 U
2,4-Dichlorophenol	ug/kg				190 U
Diethylphthalate	ug/kg				190 U
2,4-Dimethylphenol	ug/kg				190 U
Dimethylphthalate	ug/kg				190 U
4,6-Dinitro-2-methylphenol	ug/kg				370 U
2,4-Dinitrophenol	ug/kg				370 U
2,4-Dinitrotoluene	ug/kg				190 U
2,6-Dinitrotoluene	ug/kg				190 U
Fluoranthene	ug/kg				6400
Fluorene	ug/kg				310
Hexachlorobenzene	ug/kg				190 U
Hexachlorobutadiene	ug/kg				190 U
Hexachlorocyclopentadiene	ug/kg				190 U
Hexachloroethane	ug/kg				190 U
Indeno(1,2,3-cd)pyrene	ug/kg				9400
Isophorone	ug/kg				190 U
2-Methylnaphthalene	ug/kg				530
2-Methylphenol	ug/kg				190 U
4-Methylphenol	ug/kg				190 U
Naphthalene	ug/kg				300
2-Nitroaniline	ug/kg				370 U
3-Nitroaniline	ug/kg				370 U
4-Nitroaniline	ug/kg				370 U
Nitrobenzene	ug/kg				190 U
2-Nitrophenol	ug/kg				190 U
4-Nitrophenol	ug/kg				370 U
N-nitroso-di-n-propylamine	ug/kg				190 U
N-nitrosodiphenylamine	ug/kg				190 U
Pentachlorophenol	ug/kg				370 U
Phenanthrene	ug/kg				3000
Phenol	ug/kg				190 U
Pyrene	ug/kg				7700 J
1,2,4,5-Tetrachlorobenzene	ug/kg				190 U
2,4,5-Trichlorophenol	ug/kg				190 U
2,4,6-Trichlorophenol	ug/kg				190 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg				27.4 J
Barium	mg/kg				143
Cadmium	mg/kg				2.2 J

Analysis/ Analyte	Units	4-FD	5-__	6-__	101-__
Chromium	mg/kg				15.7
Lead	mg/kg				248
Selenium	mg/kg				4.7
Silver	mg/kg				1.1 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg				1850
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg				18900
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg				13 U
Benzene	ug/kg				6.6 U
Bromodichloromethane	ug/kg				6.6 U
Bromoform	ug/kg				6.6 U
Bromomethane	ug/kg				6.6 U
2-Butanone	ug/kg				13 U
Carbon Disulfide	ug/kg				6.6 U
Carbon Tetrachloride	ug/kg				6.6 U
Chlorobenzene	ug/kg				6.6 U
Chloroethane	ug/kg				6.6 U
Chloroform	ug/kg				6.6 U
Chloromethane	ug/kg				6.6 U
Cyclohexane	ug/kg				6.6 U
1,2-Dibromo-3-Chloropropane	ug/kg				6.6 U
Dibromochloromethane	ug/kg				6.6 U
1,2-Dibromoethane	ug/kg				6.6 U
1,2-Dichlorobenzene	ug/kg				6.6 U
1,3-Dichlorobenzene	ug/kg				6.6 U
1,4-Dichlorobenzene	ug/kg				6.6 U
Dichlorodifluoromethane	ug/kg				6.6 U
1,1-Dichloroethane	ug/kg				6.6 U
1,2-Dichloroethane	ug/kg				6.6 U
1,1-Dichloroethene	ug/kg				6.6 U
cis-1,2-Dichloroethene	ug/kg				6.6 U
trans-1,2-Dichloroethene	ug/kg				6.6 U
1,2-Dichloropropane	ug/kg				6.6 U
cis-1,3-Dichloropropene	ug/kg				6.6 U
trans-1,3-Dichloropropene	ug/kg				6.6 U
Ethyl Benzene	ug/kg				6.6 U
2-Hexanone	ug/kg				6.6 U
Isopropylbenzene	ug/kg				6.6 U
Methyl Acetate	ug/kg				6.6 U
Methyl tert-butyl ether	ug/kg				6.6 U
Methylcyclohexane	ug/kg				7.8
Methylene Chloride	ug/kg				6.6 U
4-Methyl-2-Pentanone	ug/kg				6.6 U

Analysis/ Analyte	Units	4-FD	5-__	6-__	101-__
Naphthalene	ug/kg				13 U
Styrene	ug/kg				6.6 U
1,1,2,2-Tetrachloroethane	ug/kg				6.6 U
Tetrachloroethene	ug/kg				11
Toluene	ug/kg				7.7
1,2,3-Trichlorobenzene	ug/kg				6.6 U
1,2,4-Trichlorobenzene	ug/kg				6.6 U
1,1,1-Trichloroethane	ug/kg				6.6 U
1,1,2-Trichloroethane	ug/kg				6.6 U
Trichloroethene	ug/kg				6.6 U
Trichlorofluoromethane	ug/kg				6.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg				6.6 U
Vinyl Chloride	ug/kg				6.6 U
m and/or p-Xylene	ug/kg				13 U
o-Xylene	ug/kg				6.6 U

Analysis/ Analyte	Units	102-__	103-__	104-__	105-__
1 Percent Solid					
Solids, percent	%	79.4	80.2	77.6	87.1
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	220 U	210 U	220 U	210 U
Acenaphthylene	ug/kg	220 U	210 U	220 U	210 U
Acetophenone	ug/kg	220 U	210 U	220 U	210 U
Anthracene	ug/kg	220 U	210 U	220 U	210 U
Atrazine	ug/kg	220 U	210 U	220 U	210 U
Benzaldehyde	ug/kg	220 U	210 U	220 U	210 U
Benzo(a)anthracene	ug/kg	220 U	210 U	220 U	210 U
Benzo(a)pyrene	ug/kg	220 U	210 U	220 U	210 U
Benzo(b)fluoranthene	ug/kg	220 U	210 U	220 U	210 U
Benzo(g,h,i)perylene	ug/kg	220 U	210 U	220 U	210 U
Benzo(k)fluoranthene	ug/kg	220 U	210 U	220 U	210 U
Biphenyl	ug/kg	220 U	210 U	220 U	210 U
bis(2-Chloroethoxy)methane	ug/kg	220 U	210 U	220 U	210 U
bis(2-Chloroethyl)ether	ug/kg	220 U	210 U	220 U	210 U
bis(2-Ethylhexyl)phthalate	ug/kg	220 U	210 U	220 U	210 U
4-Bromophenyl-phenylether	ug/kg	220 U	210 U	220 U	210 U
Butylbenzylphthalate	ug/kg	220 U	210 U	220 U	210 U
Caprolactam	ug/kg	220 U	210 U	220 U	210 U
Carbazole	ug/kg	220 U	210 U	220 U	210 U
4-Chloro-3-methylphenol	ug/kg	220 U	210 U	220 U	210 U
4-Chloroaniline	ug/kg	220 U	210 U	220 U	210 U
2-Chloronaphthalene	ug/kg	220 U	210 U	220 U	210 U
2-Chlorophenol	ug/kg	220 U	210 U	220 U	210 U
4-Chlorophenyl-phenylether	ug/kg	220 U	210 U	220 U	210 U
Chrysene	ug/kg	220 U	210 U	220 U	210 U
Di-n-butylphthalate	ug/kg	220 U	210 U	220 U	210 U
Di-n-octylphthalate	ug/kg	220 U	210 U	220 U	210 U
Dibenz(a,h)anthracene	ug/kg	220 U	210 U	220 U	210 U
Dibenzofuran	ug/kg	220 U	210 U	220 U	210 U
3,3'-Dichlorobenzidine	ug/kg	220 U	210 U	220 U	210 U
2,4-Dichlorophenol	ug/kg	220 U	210 U	220 U	210 U
Diethylphthalate	ug/kg	220 U	210 U	220 U	210 U
2,4-Dimethylphenol	ug/kg	220 U	210 U	220 U	210 U
Dimethylphthalate	ug/kg	220 U	210 U	220 U	210 U
4,6-Dinitro-2-methylphenol	ug/kg	430 U	410 U	420 U	420 U
2,4-Dinitrophenol	ug/kg	430 U	410 U	420 U	420 U
2,4-Dinitrotoluene	ug/kg	220 U	210 U	220 U	210 U
2,6-Dinitrotoluene	ug/kg	220 U	210 U	220 U	210 U
Fluoranthene	ug/kg	220 U	210 U	220 U	210 U
Fluorene	ug/kg	220 U	210 U	220 U	210 U
Hexachlorobenzene	ug/kg	220 U	210 U	220 U	210 U
Hexachlorobutadiene	ug/kg	220 U	210 U	220 U	210 U
Hexachlorocyclopentadiene	ug/kg	220 U	210 U	220 U	210 U

Analysis/ Analyte	Units	102-__	103-__	104-__	105-__
Hexachloroethane	ug/kg	220 U	210 U	220 U	210 U
Indeno(1,2,3-cd)pyrene	ug/kg	220 U	210 U	220 U	210 U
Isophorone	ug/kg	220 U	210 U	220 U	210 U
2-Methylnaphthalene	ug/kg	850	210 U	220 U	1000
2-Methylphenol	ug/kg	220 U	210 U	220 U	210 U
4-Methylphenol	ug/kg	220 U	210 U	220 U	210 U
Naphthalene	ug/kg	250	210 U	220 U	960
2-Nitroaniline	ug/kg	430 U	410 U	420 U	420 U
3-Nitroaniline	ug/kg	430 U	410 U	420 U	420 U
4-Nitroaniline	ug/kg	430 U	410 U	420 U	420 U
Nitrobenzene	ug/kg	220 U	210 U	220 U	210 U
2-Nitrophenol	ug/kg	220 U	210 U	220 U	210 U
4-Nitrophenol	ug/kg	430 U	410 U	420 U	420 U
N-nitroso-di-n-propylamine	ug/kg	220 U	210 U	220 U	210 U
N-nitrosodiphenylamine	ug/kg	220 U	210 U	220 U	210 U
Pentachlorophenol	ug/kg	430 U	410 U	420 U	420 U
Phenanthrene	ug/kg	220 U	210 U	220 U	210 U
Phenol	ug/kg	220 U	210 U	220 U	210 U
Pyrene	ug/kg	220 U	210 U	220 U	210 U
1,2,4,5-Tetrachlorobenzene	ug/kg	220 U	210 U	220 U	210 U
2,4,5-Trichlorophenol	ug/kg	220 U	210 U	220 U	210 U
2,4,6-Trichlorophenol	ug/kg	220 U	210 U	220 U	210 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	8.8	14.9	8.8	5.4
Barium	mg/kg	186	199	169	134
Cadmium	mg/kg	0.67	0.75	0.74	0.87
Chromium	mg/kg	14.8	19.9	15.0	16.1
Lead	mg/kg	56.5	21.9	12.9	63.3
Selenium	mg/kg	3.3 U	3.8	3.3 U	3.2 U
Silver	mg/kg	0.95 UJ	0.88 UJ	0.94 UJ	0.91 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	1640	85.7 U	86.6 U	2090
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	1210000	2560 U	255000	3650000
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	620 U	620 U	74	2900 U
Benzene	ug/kg	310 U	310 U	5.6 U	1400 U
Bromodichloromethane	ug/kg	310 U	310 U	5.6 U	1400 U
Bromoform	ug/kg	310 U	310 U	5.6 U	1400 U
Bromomethane	ug/kg	310 UJ	310 UJ	5.6 U	1400 UJ
2-Butanone	ug/kg	620 U	620 U	11 U	2900 U
Carbon Disulfide	ug/kg	310 U	310 U	5.6 U	1400 U
Carbon Tetrachloride	ug/kg	310 U	310 U	5.6 U	1400 U
Chlorobenzene	ug/kg	310 U	310 U	5.6 U	1400 U
Chloroethane	ug/kg	310 U	310 U	5.6 U	1400 U

Analysis/ Analyte	Units	102-__	103-__	104-__	105-__
Chloroform	ug/kg	310 U	310 U	5.6 U	1400 U
Chloromethane	ug/kg	310 U	310 U	5.6 U	1400 U
Cyclohexane	ug/kg	4700	310 U	60	2200
1,2-Dibromo-3-Chloropropane	ug/kg	310 U	310 U	5.6 U	1400 U
Dibromochloromethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,2-Dibromoethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,2-Dichlorobenzene	ug/kg	310 U	310 U	5.6 U	5700
1,3-Dichlorobenzene	ug/kg	310 U	310 U	5.6 U	1400 U
1,4-Dichlorobenzene	ug/kg	310 U	310 U	5.6 U	1400 U
Dichlorodifluoromethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,1-Dichloroethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,2-Dichloroethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,1-Dichloroethene	ug/kg	310 U	310 U	5.6 U	1400 U
cis-1,2-Dichloroethene	ug/kg	310 U	310 U	5.6 U	1400 U
trans-1,2-Dichloroethene	ug/kg	310 U	310 U	5.6 U	1400 U
1,2-Dichloropropane	ug/kg	310 U	310 U	5.6 U	1400 U
cis-1,3-Dichloropropene	ug/kg	310 U	310 U	5.6 U	1400 U
trans-1,3-Dichloropropene	ug/kg	310 U	310 U	5.6 U	1400 U
Ethyl Benzene	ug/kg	310 U	310 U	5.6 U	19000
2-Hexanone	ug/kg	310 U	310 U	5.6 U	1400 U
Isopropylbenzene	ug/kg	2800	310 U	30	8400
Methyl Acetate	ug/kg	310 U	310 U	5.6 U	1400 U
Methyl tert-butyl ether	ug/kg	310 U	310 U	5.6 U	1400 U
Methylcyclohexane	ug/kg	47000	1300	2600	50000
Methylene Chloride	ug/kg	3200	3200	5.6 U	2300
4-Methyl-2-Pentanone	ug/kg	310 U	310 U	5.6 U	1400 U
Naphthalene	ug/kg	630	620 U	11 U	40000
Styrene	ug/kg	310 U	310 U	5.6 U	1400 U
1,1,2,2-Tetrachloroethane	ug/kg	310 U	310 U	5.6 U	6100
Tetrachloroethene	ug/kg	310 U	310 U	5.6 U	1400 U
Toluene	ug/kg	310 U	310 U	5.6 U	1400 U
1,2,3-Trichlorobenzene	ug/kg	310 U	310 U	5.6 U	1400 U
1,2,4-Trichlorobenzene	ug/kg	310 U	310 U	5.6 U	1400 U
1,1,1-Trichloroethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,1,2-Trichloroethane	ug/kg	310 U	310 U	5.6 U	1400 U
Trichloroethene	ug/kg	310 U	310 U	5.6 U	1400 U
Trichlorofluoromethane	ug/kg	310 U	310 U	5.6 U	1400 U
1,1,2-Trichlorotrifluoroethane	ug/kg	310 U	310 U	5.6 U	1400 U
Vinyl Chloride	ug/kg	310 U	310 U	5.6 U	1400 U
m and/or p-Xylene	ug/kg	620 U	620 U	11 U	37000
o-Xylene	ug/kg	310 U	310 U	5.6 U	2600

Analysis/ Analyte	Units	106-__	107-__	108-__	109-__
1 Percent Solid					
Solids, percent	%	77.1	79.0	94.9	94.8
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	220 U	220 U	170 U	180 U
Acenaphthylene	ug/kg	220 U	220 U	170 U	180 U
Acetophenone	ug/kg	220 U	220 U	170 U	180 U
Anthracene	ug/kg	220 U	220 U	170 U	180 U
Atrazine	ug/kg	220 U	220 U	170 U	180 U
Benzaldehyde	ug/kg	220 U	220 U	170 U	180 U
Benzo(a)anthracene	ug/kg	220 U	220 U	450	180 U
Benzo(a)pyrene	ug/kg	220 U	220 U	340	180 U
Benzo(b)fluoranthene	ug/kg	220 U	220 U	440	180 U
Benzo(g,h,i)perylene	ug/kg	220 U	220 U	260	180 U
Benzo(k)fluoranthene	ug/kg	220 U	220 U	260	180 U
Biphenyl	ug/kg	220 U	220 U	170 U	180 U
bis(2-Chloroethoxy)methane	ug/kg	220 U	220 U	170 U	180 U
bis(2-Chloroethyl)ether	ug/kg	220 U	220 U	170 U	180 U
bis(2-Ethylhexyl)phthalate	ug/kg	260	220 U	330	230
4-Bromophenyl-phenylether	ug/kg	220 U	220 U	170 U	180 U
Butylbenzylphthalate	ug/kg	220 U	220 U	170 U	180 U
Caprolactam	ug/kg	220 U	220 U	170 U	180 U
Carbazole	ug/kg	220 U	220 U	170 U	180 U
4-Chloro-3-methylphenol	ug/kg	220 U	220 U	170 U	180 U
4-Chloroaniline	ug/kg	220 U	220 U	170 U	180 U
2-Chloronaphthalene	ug/kg	220 U	220 U	170 U	180 U
2-Chlorophenol	ug/kg	220 U	220 U	170 U	180 U
4-Chlorophenyl-phenylether	ug/kg	220 U	220 U	170 U	180 U
Chrysene	ug/kg	220 U	220 U	410	180 U
Di-n-butylphthalate	ug/kg	220 U	220 U	170 U	180 U
Di-n-octylphthalate	ug/kg	220 U	220 U	170 U	180 U
Dibenz(a,h)anthracene	ug/kg	220 U	220 U	170 U	180 U
Dibenzofuran	ug/kg	290	220 U	170 U	180 U
3,3'-Dichlorobenzidine	ug/kg	220 U	220 U	170 U	180 U
2,4-Dichlorophenol	ug/kg	220 U	220 U	170 U	180 U
Diethylphthalate	ug/kg	220 U	220 U	170 U	180 U
2,4-Dimethylphenol	ug/kg	220 U	220 U	170 U	180 U
Dimethylphthalate	ug/kg	220 U	220 U	170 U	180 U
4,6-Dinitro-2-methylphenol	ug/kg	430 U	440 U	340 U	360 U
2,4-Dinitrophenol	ug/kg	430 U	440 U	340 U	360 U
2,4-Dinitrotoluene	ug/kg	220 U	220 U	170 U	180 U
2,6-Dinitrotoluene	ug/kg	220 U	220 U	170 U	180 U
Fluoranthene	ug/kg	220 U	220 U	830	290
Fluorene	ug/kg	340	220 U	170 U	180 U
Hexachlorobenzene	ug/kg	220 U	220 U	170 U	180 U
Hexachlorobutadiene	ug/kg	220 U	220 U	170 U	180 U
Hexachlorocyclopentadiene	ug/kg	220 U	220 U	170 U	180 U

Analysis/ Analyte	Units	106-__	107-__	108-__	109-__
Hexachloroethane	ug/kg	220 U	220 U	170 U	180 U
Indeno(1,2,3-cd)pyrene	ug/kg	220 U	220 U	220	180 U
Isophorone	ug/kg	220 U	220 U	170 U	180 U
2-Methylnaphthalene	ug/kg	4300	880	170 U	510
2-Methylphenol	ug/kg	220 U	220 U	170 U	180 U
4-Methylphenol	ug/kg	220 U	220 U	170 U	180 U
Naphthalene	ug/kg	620	380	170 U	180 U
2-Nitroaniline	ug/kg	430 U	440 U	340 U	360 U
3-Nitroaniline	ug/kg	430 U	440 U	340 U	360 U
4-Nitroaniline	ug/kg	430 U	440 U	340 U	360 U
Nitrobenzene	ug/kg	220 U	220 U	170 U	180 U
2-Nitrophenol	ug/kg	220 U	220 U	170 U	180 U
4-Nitrophenol	ug/kg	430 U	440 U	340 U	360 U
N-nitroso-di-n-propylamine	ug/kg	220 U	220 U	170 U	180 U
N-nitrosodiphenylamine	ug/kg	220 U	220 U	170 U	180 U
Pentachlorophenol	ug/kg	430 U	440 U	340 U	360 U
Phenanthrene	ug/kg	680	220 U	460	270
Phenol	ug/kg	220 U	220 U	170 U	180 U
Pyrene	ug/kg	220 U	220 U	690	260
1,2,4,5-Tetrachlorobenzene	ug/kg	220 U	220 U	170 U	180 U
2,4,5-Trichlorophenol	ug/kg	220 U	220 U	170 U	180 U
2,4,6-Trichlorophenol	ug/kg	220 U	220 U	170 U	180 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	4.5	11.5	2.6	2.7
Barium	mg/kg	190	171	44.4	35.0
Cadmium	mg/kg	0.46 U	0.74	0.88	0.44 U
Chromium	mg/kg	13.1	18.2	6.8	8.2
Lead	mg/kg	13.7	24.0	28.1	12.3
Selenium	mg/kg	3.2 U	3.4 U	2.6 U	3.1 U
Silver	mg/kg	0.92 UJ	0.97 UJ	0.76 UJ	0.89 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	578	401	110	166
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	1420000	1090000	17600	45600
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	650 U	13 U	170	10 UJ
Benzene	ug/kg	1200	450	9.4	190
Bromodichloromethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Bromoform	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Bromomethane	ug/kg	320 UJ	6.4 U	6.0 U	5.2 U
2-Butanone	ug/kg	650 U	13 U	12 U	10 U
Carbon Disulfide	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Carbon Tetrachloride	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Chlorobenzene	ug/kg	320 U	10	780	600
Chloroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U

Analysis/ Analyte	Units	106-__	107-__	108-__	109-__
Chloroform	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Chloromethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Cyclohexane	ug/kg	11000	16000	6.0 U	51
1,2-Dibromo-3-Chloropropane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Dibromochloromethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,2-Dibromoethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,2-Dichlorobenzene	ug/kg	320 U	6.4 U	11	130
1,3-Dichlorobenzene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,4-Dichlorobenzene	ug/kg	320 U	6.4 U	15	94
Dichlorodifluoromethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1-Dichloroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,2-Dichloroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1-Dichloroethene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
cis-1,2-Dichloroethene	ug/kg	320 U	6.4 U	6.0 U	7.3
trans-1,2-Dichloroethene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,2-Dichloropropane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
cis-1,3-Dichloropropene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
trans-1,3-Dichloropropene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Ethyl Benzene	ug/kg	810	35	6.0 U	110
2-Hexanone	ug/kg	320 U	6.4 U	6.0 U	5.2 UJ
Isopropylbenzene	ug/kg	3000	110	23	120
Methyl Acetate	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Methyl tert-butyl ether	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Methylcyclohexane	ug/kg	47000	68000	22	230
Methylene Chloride	ug/kg	3100	6.4 U	6.0 U	5.2 U
4-Methyl-2-Pentanone	ug/kg	320 U	6.4 U	6.0 U	36
Naphthalene	ug/kg	650 U	22	12 U	100
Styrene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1,2,2-Tetrachloroethane	ug/kg	320 U	6.4 U	6.0 U	9.9
Tetrachloroethene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Toluene	ug/kg	320 U	6.4 U	6.0 U	67
1,2,3-Trichlorobenzene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,2,4-Trichlorobenzene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1,1-Trichloroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1,2-Trichloroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Trichloroethene	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Trichlorofluoromethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
1,1,2-Trichlorotrifluoroethane	ug/kg	320 U	6.4 U	6.0 U	5.2 U
Vinyl Chloride	ug/kg	320 U	6.4 U	6.0 U	5.2 U
m and/or p-Xylene	ug/kg	650	41	12 U	360
o-Xylene	ug/kg	320 U	6.4 U	6.0 U	5.2 U

Analysis/ Analyte	Units	110-__	111-__	112-__	113-__
1 Percent Solid					
Solids, percent	%	88.2	99.1	98.6	85.2
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	200 U	180 U	170 U	210 U
Acenaphthylene	ug/kg	200 U	180 U	170 U	210 U
Acetophenone	ug/kg	200 U	180 U	170 U	210 U
Anthracene	ug/kg	200 U	180 U	170 U	210 U
Atrazine	ug/kg	200 U	180 U	170 U	210 U
Benzaldehyde	ug/kg	200 U	180 U	170 U	210 U
Benzo(a)anthracene	ug/kg	200 U	180 U	170 U	210 U
Benzo(a)pyrene	ug/kg	200 U	180 U	170 U	210 U
Benzo(b)fluoranthene	ug/kg	200 U	180 U	170 U	210 U
Benzo(g,h,i)perylene	ug/kg	200 U	180 U	170 U	210 U
Benzo(k)fluoranthene	ug/kg	200 U	180 U	170 U	210 U
Biphenyl	ug/kg	200 U	180 U	170 U	210 U
bis(2-Chloroethoxy)methane	ug/kg	200 U	180 U	170 U	210 U
bis(2-Chloroethyl)ether	ug/kg	200 U	180 U	170 U	210 U
bis(2-Ethylhexyl)phthalate	ug/kg	450	180 U	170 U	11000
4-Bromophenyl-phenylether	ug/kg	200 U	180 U	170 U	210 U
Butylbenzylphthalate	ug/kg	200 U	180 U	170 U	210 U
Caprolactam	ug/kg	200 U	180 U	170 U	210 U
Carbazole	ug/kg	200 U	180 U	170 U	210 U
4-Chloro-3-methylphenol	ug/kg	200 U	180 U	170 U	210 U
4-Chloroaniline	ug/kg	200 U	180 U	170 U	210 U
2-Chloronaphthalene	ug/kg	200 U	180 U	170 U	210 U
2-Chlorophenol	ug/kg	200 U	180 U	170 U	210 U
4-Chlorophenyl-phenylether	ug/kg	200 U	180 U	170 U	210 U
Chrysene	ug/kg	200 U	180 U	170 U	210 U
Di-n-butylphthalate	ug/kg	200 U	180 U	170 U	210 U
Di-n-octylphthalate	ug/kg	200 U	180 U	170 U	210 U
Dibenz(a,h)anthracene	ug/kg	200 U	180 U	170 U	210 U
Dibenzofuran	ug/kg	200 U	180 U	170 U	210 U
3,3'-Dichlorobenzidine	ug/kg	200 U	180 U	170 U	210 U
2,4-Dichlorophenol	ug/kg	200 U	180 U	170 U	210 U
Diethylphthalate	ug/kg	200 U	180 U	170 U	210 U
2,4-Dimethylphenol	ug/kg	200 U	180 U	170 U	210 U
Dimethylphthalate	ug/kg	200 U	180 U	170 U	210 U
4,6-Dinitro-2-methylphenol	ug/kg	380 U	340 U	330 U	410 U
2,4-Dinitrophenol	ug/kg	380 U	340 U	330 U	410 U
2,4-Dinitrotoluene	ug/kg	200 U	180 U	170 U	210 U
2,6-Dinitrotoluene	ug/kg	200 U	180 U	170 U	210 U
Fluoranthene	ug/kg	270	220	200	210 U
Fluorene	ug/kg	200 U	180 U	170 U	620
Hexachlorobenzene	ug/kg	200 U	180 U	170 U	210 U
Hexachlorobutadiene	ug/kg	200 U	180 U	170 U	210 U
Hexachlorocyclopentadiene	ug/kg	200 U	180 U	170 U	210 U

Analysis/ Analyte	Units	110-__	111-__	112-__	113-__
Hexachloroethane	ug/kg	200 U	180 U	170 U	210 U
Indeno(1,2,3-cd)pyrene	ug/kg	200 U	180 U	170 U	210 U
Isophorone	ug/kg	200 U	180 U	170 U	210 U
2-Methylnaphthalene	ug/kg	900	180 U	170 U	7700
2-Methylphenol	ug/kg	200 U	180 U	170 U	210 U
4-Methylphenol	ug/kg	200 U	180 U	170 U	210 U
Naphthalene	ug/kg	210	180 U	170 U	2500
2-Nitroaniline	ug/kg	380 U	340 U	330 U	410 U
3-Nitroaniline	ug/kg	380 U	340 U	330 U	410 U
4-Nitroaniline	ug/kg	380 U	340 U	330 U	410 U
Nitrobenzene	ug/kg	200 U	180 U	170 U	210 U
2-Nitrophenol	ug/kg	200 U	180 U	170 U	210 U
4-Nitrophenol	ug/kg	380 U	340 U	330 U	410 U
N-nitroso-di-n-propylamine	ug/kg	200 U	180 U	170 U	210 U
N-nitrosodiphenylamine	ug/kg	200 U	180 U	170 U	210 U
Pentachlorophenol	ug/kg	380 U	340 U	330 U	410 U
Phenanthrene	ug/kg	350	180 U	180	1500
Phenol	ug/kg	200 U	180 U	170 U	210 U
Pyrene	ug/kg	260	190	170	240
1,2,4,5-Tetrachlorobenzene	ug/kg	200 U	180 U	170 U	210 U
2,4,5-Trichlorophenol	ug/kg	200 U	180 U	170 U	210 U
2,4,6-Trichlorophenol	ug/kg	200 U	180 U	170 U	210 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	14.9	3.8	3.7	7.5
Barium	mg/kg	113	42.5	55.5	189
Cadmium	mg/kg	1.1	0.41 U	0.44 U	0.85
Chromium	mg/kg	12.0	4.3	6.3	19.4
Lead	mg/kg	27.7	21.2	22.1	42.2
Selenium	mg/kg	3.0 U	2.9 U	3.1 U	3.8 U
Silver	mg/kg	0.86 UJ	0.83 UJ	0.88 UJ	1.1 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	2270 J	67.8 U	356	3010
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	352000	2040 U	177000	275000
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	58 UJ	240 J	44 J	59 UJ
Benzene	ug/kg	720	18	3.5 U	490
Bromodichloromethane	ug/kg	29 U	5.6 U	3.5 U	30 U
Bromoform	ug/kg	29 U	5.6 U	3.5 U	30 U
Bromomethane	ug/kg	29 U	5.6 U	3.5 U	30 U
2-Butanone	ug/kg	58 U	11 U	7.1 U	59 U
Carbon Disulfide	ug/kg	29 U	5.6 U	3.5 U	30 U
Carbon Tetrachloride	ug/kg	29 U	5.6 U	3.5 U	30 U
Chlorobenzene	ug/kg	9500	190	3.8	8200
Chloroethane	ug/kg	29 U	5.6 U	3.5 U	30 U

Analysis/ Analyte	Units	110-__	111-__	112-__	113-__
Chloroform	ug/kg	29 U	5.6 U	3.5 U	30 U
Chloromethane	ug/kg	29 U	5.6 U	3.5 U	30 U
Cyclohexane	ug/kg	720	18	3.5 U	560
1,2-Dibromo-3-Chloropropane	ug/kg	29 U	5.6 U	3.5 U	30 U
Dibromochloromethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,2-Dibromoethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,2-Dichlorobenzene	ug/kg	470	24	3.5 U	590
1,3-Dichlorobenzene	ug/kg	55	5.6 U	3.5 U	38
1,4-Dichlorobenzene	ug/kg	820	8.0	3.5 U	550
Dichlorodifluoromethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1-Dichloroethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,2-Dichloroethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1-Dichloroethene	ug/kg	29 U	5.6 U	3.5 U	30 U
cis-1,2-Dichloroethene	ug/kg	29 U	5.6 U	3.5 U	35
trans-1,2-Dichloroethene	ug/kg	29 U	5.6 U	3.5 U	30 U
1,2-Dichloropropane	ug/kg	29 U	5.6 U	3.5 U	30 U
cis-1,3-Dichloropropene	ug/kg	29 U	5.6 U	3.5 U	30 U
trans-1,3-Dichloropropene	ug/kg	29 U	5.6 U	3.5 U	30 U
Ethyl Benzene	ug/kg	3800	58	3.5 U	3400
2-Hexanone	ug/kg	29 UJ	5.6 UJ	3.5 UJ	30 UJ
Isopropylbenzene	ug/kg	880	8.2	3.5 U	770
Methyl Acetate	ug/kg	29 U	13	3.5 U	30 U
Methyl tert-butyl ether	ug/kg	29 U	5.6 U	3.5 U	30 U
Methylcyclohexane	ug/kg	2300	85	3.5 U	2000
Methylene Chloride	ug/kg	29 U	5.6 U	3.5 U	30 U
4-Methyl-2-Pentanone	ug/kg	29 U	11 U	3.5 U	30 U
Naphthalene	ug/kg	1100	11 U	7.1 U	960
Styrene	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1,2,2-Tetrachloroethane	ug/kg	29 U	5.6 U	3.5 U	41
Tetrachloroethene	ug/kg	29 U	6.2	3.5 U	30 U
Toluene	ug/kg	81	53	3.5 U	300
1,2,3-Trichlorobenzene	ug/kg	29 U	5.6 U	3.5 U	30 U
1,2,4-Trichlorobenzene	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1,1-Trichloroethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1,2-Trichloroethane	ug/kg	29 U	5.6 U	3.5 U	30 U
Trichloroethene	ug/kg	29 U	5.6 U	3.5 U	30 U
Trichlorofluoromethane	ug/kg	29 U	5.6 U	3.5 U	30 U
1,1,2-Trichlorotrifluoroethane	ug/kg	29 U	5.6 U	3.5 U	30 U
Vinyl Chloride	ug/kg	29 U	5.6 U	3.5 U	33
m and/or p-Xylene	ug/kg	4400	190	7.1 U	5900
o-Xylene	ug/kg	580	52	3.5 U	1600

Analysis/ Analyte	Units	114-__	115-__	115-FD	116-__
1 Percent Solid					
Solids, percent	%	93.9	87.5	88.0	90.8
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	190 U	200 U	200 U	180 U
Acenaphthylene	ug/kg	190 U	200 U	200 U	180 U
Acetophenone	ug/kg	190 U	200 U	200 U	180 U
Anthracene	ug/kg	190 U	200 U	200 U	180 U
Atrazine	ug/kg	190 U	200 U	200 U	180 U
Benzaldehyde	ug/kg	190 U	200 U	200 U	180 U
Benzo(a)anthracene	ug/kg	190 U	280	290	180 U
Benzo(a)pyrene	ug/kg	190 U	230	260	180 U
Benzo(b)fluoranthene	ug/kg	190 U	300	310	180 U
Benzo(g,h,i)perylene	ug/kg	190 U	200 U	200 U	180 U
Benzo(k)fluoranthene	ug/kg	190 U	230	240	180 U
Biphenyl	ug/kg	190 U	200 U	200 U	180 U
bis(2-Chloroethoxy)methane	ug/kg	190 U	200 U	200 U	180 U
bis(2-Chloroethyl)ether	ug/kg	190 U	200 U	200 U	180 U
bis(2-Ethylhexyl)phthalate	ug/kg	570	360	350	180 U
4-Bromophenyl-phenylether	ug/kg	190 U	200 U	200 U	180 U
Butylbenzylphthalate	ug/kg	190 U	200 U	200 U	180 U
Caprolactam	ug/kg	190 U	200 U	200 U	180 U
Carbazole	ug/kg	190 U	200 U	200 U	180 U
4-Chloro-3-methylphenol	ug/kg	190 U	200 U	200 U	180 U
4-Chloroaniline	ug/kg	190 U	200 U	200 U	180 U
2-Chloronaphthalene	ug/kg	190 U	200 U	200 U	180 U
2-Chlorophenol	ug/kg	190 U	200 U	200 U	180 U
4-Chlorophenyl-phenylether	ug/kg	190 U	200 U	200 U	180 U
Chrysene	ug/kg	190 U	270	300	180 U
Di-n-butylphthalate	ug/kg	190 U	200 U	200 U	180 U
Di-n-octylphthalate	ug/kg	190 U	200 U	200 U	180 U
Dibenz(a,h)anthracene	ug/kg	190 U	200 U	200 U	180 U
Dibenzofuran	ug/kg	190 U	200 U	200 U	180 U
3,3'-Dichlorobenzidine	ug/kg	190 U	200 U	200 U	180 U
2,4-Dichlorophenol	ug/kg	190 U	200 U	200 U	180 U
Diethylphthalate	ug/kg	190 U	200 U	200 U	180 U
2,4-Dimethylphenol	ug/kg	190 U	200 U	200 U	180 U
Dimethylphthalate	ug/kg	190 U	200 U	200 U	180 U
4,6-Dinitro-2-methylphenol	ug/kg	360 U	400 U	400 U	350 U
2,4-Dinitrophenol	ug/kg	360 U	400 U	400 U	350 U
2,4-Dinitrotoluene	ug/kg	190 U	200 U	200 U	180 U
2,6-Dinitrotoluene	ug/kg	190 U	200 U	200 U	180 U
Fluoranthene	ug/kg	190 U	460	510	180 U
Fluorene	ug/kg	190 U	200 U	200 U	180 U
Hexachlorobenzene	ug/kg	190 U	200 U	200 U	180 U
Hexachlorobutadiene	ug/kg	190 U	200 U	200 U	180 U
Hexachlorocyclopentadiene	ug/kg	190 U	200 U	200 U	180 U

Analysis/ Analyte	Units	114-__	115-__	115-FD	116-__
Hexachloroethane	ug/kg	190 U	200 U	200 U	180 U
Indeno(1,2,3-cd)pyrene	ug/kg	190 U	200 U	200 U	180 U
Isophorone	ug/kg	190 U	200 U	200 U	180 U
2-Methylnaphthalene	ug/kg	330	200 U	200 U	180 U
2-Methylphenol	ug/kg	190 U	200 U	200 U	180 U
4-Methylphenol	ug/kg	190 U	200 U	200 U	180 U
Naphthalene	ug/kg	190 U	200 U	200 U	180 U
2-Nitroaniline	ug/kg	360 U	400 U	400 U	350 U
3-Nitroaniline	ug/kg	360 U	400 U	400 U	350 U
4-Nitroaniline	ug/kg	360 U	400 U	400 U	350 U
Nitrobenzene	ug/kg	190 U	200 U	200 U	180 U
2-Nitrophenol	ug/kg	190 U	200 U	200 U	180 U
4-Nitrophenol	ug/kg	360 U	400 U	400 U	350 U
N-nitroso-di-n-propylamine	ug/kg	190 U	200 U	200 U	180 U
N-nitrosodiphenylamine	ug/kg	190 U	200 U	200 U	180 U
Pentachlorophenol	ug/kg	360 U	400 U	400 U	350 U
Phenanthrene	ug/kg	190 U	300	320	180 U
Phenol	ug/kg	190 U	200 U	200 U	180 U
Pyrene	ug/kg	190 U	450	460	180 U
1,2,4,5-Tetrachlorobenzene	ug/kg	190 U	200 U	200 U	180 U
2,4,5-Trichlorophenol	ug/kg	190 U	200 U	200 U	180 U
2,4,6-Trichlorophenol	ug/kg	190 U	200 U	200 U	180 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	2.6	5.7	6.8	6.5
Barium	mg/kg	21.6	62.4	86.8	45.0
Cadmium	mg/kg	0.40 U	0.43 U	0.47 U	0.69
Chromium	mg/kg	5.5	9.4	11.7	9.3
Lead	mg/kg	7.3	14.4	15.8	11.6
Selenium	mg/kg	2.8 U	3.0 U	3.3 U	3.5 U
Silver	mg/kg	0.80 UJ	0.85 UJ	0.94 UJ	1.0 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	234	307	167	70.8 U
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	3320	52300	53100	2130 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	52 J	47 UJ	56 UJ	280 J
Benzene	ug/kg	10	24 U	28 U	5.9 U
Bromodichloromethane	ug/kg	4.4 U	24 U	28 U	5.9 U
Bromoform	ug/kg	4.4 U	24 U	28 U	5.9 U
Bromomethane	ug/kg	4.4 U	24 U	28 U	5.9 U
2-Butanone	ug/kg	8.8 U	47 U	56 U	62 J
Carbon Disulfide	ug/kg	4.4 U	24 U	28 U	5.9 U
Carbon Tetrachloride	ug/kg	4.4 U	24 U	28 U	5.9 U
Chlorobenzene	ug/kg	110	150	110	5.9 U
Chloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U

Analysis/ Analyte	Units	114-__	115-__	115-FD	116-__
Chloroform	ug/kg	4.4 U	24 U	28 U	5.9 U
Chloromethane	ug/kg	4.4 U	24 U	28 U	5.9 U
Cyclohexane	ug/kg	7.4	58	49	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	4.4 U	24 U	28 U	5.9 U
Dibromochloromethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,2-Dibromoethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,2-Dichlorobenzene	ug/kg	4.6	72	54	5.9 U
1,3-Dichlorobenzene	ug/kg	4.4 U	24 U	28 U	5.9 U
1,4-Dichlorobenzene	ug/kg	4.4 U	24 U	28 U	5.9 U
Dichlorodifluoromethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1-Dichloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,2-Dichloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1-Dichloroethene	ug/kg	4.4 U	24 U	28 U	5.9 U
cis-1,2-Dichloroethene	ug/kg	4.4 U	24 U	28 U	5.9 U
trans-1,2-Dichloroethene	ug/kg	4.4 U	24 U	28 U	5.9 U
1,2-Dichloropropane	ug/kg	4.4 U	24 U	28 U	5.9 U
cis-1,3-Dichloropropene	ug/kg	4.4 U	24 U	28 U	5.9 U
trans-1,3-Dichloropropene	ug/kg	4.4 U	24 U	28 U	5.9 U
Ethyl Benzene	ug/kg	13	420	360	5.9 U
2-Hexanone	ug/kg	4.4 UJ	24 UJ	28 UJ	5.9 UJ
Isopropylbenzene	ug/kg	12	69	64	5.9 U
Methyl Acetate	ug/kg	4.4 U	24 U	28 U	5.9 U
Methyl tert-butyl ether	ug/kg	4.4 U	24 U	28 U	5.9 U
Methylcyclohexane	ug/kg	52	500	400	9.3 J
Methylene Chloride	ug/kg	4.4 U	24 U	28 U	5.9 U
4-Methyl-2-Pentanone	ug/kg	4.4 U	24 U	28 U	5.9 U
Naphthalene	ug/kg	8.8 U	53	56 U	12 U
Styrene	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
Tetrachloroethene	ug/kg	4.4 U	24 U	28 U	5.9 U
Toluene	ug/kg	11	320	250	7.0 J
1,2,3-Trichlorobenzene	ug/kg	4.4 U	24 U	28 U	5.9 U
1,2,4-Trichlorobenzene	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1,1-Trichloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1,2-Trichloroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
Trichloroethene	ug/kg	4.4 U	24 U	28 U	5.9 U
Trichlorofluoromethane	ug/kg	4.4 U	24 U	28 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	4.4 U	24 U	28 U	5.9 U
Vinyl Chloride	ug/kg	4.4 U	24 U	28 U	5.9 U
m and/or p-Xylene	ug/kg	46	1800	1600	12 U
o-Xylene	ug/kg	8.6	410	340	5.9 U

Analysis/ Analyte	Units	117-__	118-__	119-__	119-FD
1 Percent Solid					
Solids, percent	%	80.8	82.3	80.9	81.1
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	330	210 U	220 U	220 U
Acenaphthylene	ug/kg	210 U	210 U	220 U	220 U
Acetophenone	ug/kg	210 U	210 U	220 U	220 U
Anthracene	ug/kg	310	210 U	220 U	220 U
Atrazine	ug/kg	210 U	210 U	220 U	220 U
Benzaldehyde	ug/kg	210 U	210 U	220 U	220 U
Benzo(a)anthracene	ug/kg	560	210 U	220 U	220 U
Benzo(a)pyrene	ug/kg	360	210 U	220 U	220 U
Benzo(b)fluoranthene	ug/kg	430	210 U	220 U	220 U
Benzo(g,h,i)perylene	ug/kg	210 U	210 U	220 U	220 U
Benzo(k)fluoranthene	ug/kg	390	210 U	220 U	220 U
Biphenyl	ug/kg	210 U	210 U	220 U	220 U
bis(2-Chloroethoxy)methane	ug/kg	210 U	210 U	220 U	220 U
bis(2-Chloroethyl)ether	ug/kg	210 U	210 U	220 U	220 U
bis(2-Ethylhexyl)phthalate	ug/kg	270	210 U	220 U	220 U
4-Bromophenyl-phenylether	ug/kg	210 U	210 U	220 U	220 U
Butylbenzylphthalate	ug/kg	210 U	210 U	220 U	220 U
Caprolactam	ug/kg	210 U	210 U	220 U	220 U
Carbazole	ug/kg	210 U	210 U	220 U	220 U
4-Chloro-3-methylphenol	ug/kg	210 U	210 U	220 U	220 U
4-Chloroaniline	ug/kg	210 U	210 U	220 U	220 U
2-Chloronaphthalene	ug/kg	210 U	210 U	220 U	220 U
2-Chlorophenol	ug/kg	210 U	210 U	220 U	220 U
4-Chlorophenyl-phenylether	ug/kg	210 U	210 U	220 U	220 U
Chrysene	ug/kg	620	210 U	220 U	220 U
Di-n-butylphthalate	ug/kg	210 U	210 U	220 U	220 U
Di-n-octylphthalate	ug/kg	210 U	210 U	220 U	220 U
Dibenz(a,h)anthracene	ug/kg	210 U	210 U	220 U	220 U
Dibenzofuran	ug/kg	220	210 U	220 U	220 U
3,3'-Dichlorobenzidine	ug/kg	210 U	210 U	220 U	220 U
2,4-Dichlorophenol	ug/kg	210 U	210 U	220 U	220 U
Diethylphthalate	ug/kg	210 U	210 U	220 U	220 U
2,4-Dimethylphenol	ug/kg	210 U	210 U	220 U	220 U
Dimethylphthalate	ug/kg	210 U	210 U	220 U	220 U
4,6-Dinitro-2-methylphenol	ug/kg	410 U	410 U	420 U	420 U
2,4-Dinitrophenol	ug/kg	410 U	410 U	420 U	420 U
2,4-Dinitrotoluene	ug/kg	210 U	210 U	220 U	220 U
2,6-Dinitrotoluene	ug/kg	210 U	210 U	220 U	220 U
Fluoranthene	ug/kg	1400	210 U	220 U	220 U
Fluorene	ug/kg	470	210 U	220 U	220 U
Hexachlorobenzene	ug/kg	210 U	210 U	220 U	220 U
Hexachlorobutadiene	ug/kg	210 U	210 U	220 U	220 U
Hexachlorocyclopentadiene	ug/kg	210 U	210 U	220 U	220 U

Analysis/ Analyte	Units	117-__	118-__	119-__	119-FD
Hexachloroethane	ug/kg	210 U	210 U	220 U	220 U
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	210 U	220 U	220 U
Isophorone	ug/kg	210 U	210 U	220 U	220 U
2-Methylnaphthalene	ug/kg	2400	210 U	220 U	220 U
2-Methylphenol	ug/kg	210 U	210 U	220 U	220 U
4-Methylphenol	ug/kg	210 U	210 U	220 U	220 U
Naphthalene	ug/kg	1500	210 U	220 U	220 U
2-Nitroaniline	ug/kg	410 U	410 U	420 U	420 U
3-Nitroaniline	ug/kg	410 U	410 U	420 U	420 U
4-Nitroaniline	ug/kg	410 U	410 U	420 U	420 U
Nitrobenzene	ug/kg	210 U	210 U	220 U	220 U
2-Nitrophenol	ug/kg	210 U	210 U	220 U	220 U
4-Nitrophenol	ug/kg	410 U	410 U	420 U	420 U
N-nitroso-di-n-propylamine	ug/kg	210 U	210 U	220 U	220 U
N-nitrosodiphenylamine	ug/kg	210 U	210 U	220 U	220 U
Pentachlorophenol	ug/kg	410 U	410 U	420 U	420 U
Phenanthrene	ug/kg	1600	210 U	220 U	220 U
Phenol	ug/kg	210 U	210 U	220 U	220 U
Pyrene	ug/kg	1400	210 U	220 U	220 U
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	210 U	220 U	220 U
2,4,5-Trichlorophenol	ug/kg	210 U	210 U	220 U	220 U
2,4,6-Trichlorophenol	ug/kg	210 U	210 U	220 U	220 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	8.3	5.4	6.8	7.9
Barium	mg/kg	189	199	201	247
Cadmium	mg/kg	0.98	0.49 U	0.68	0.51 U
Chromium	mg/kg	14.1	13.6	15.6	23.5
Lead	mg/kg	101	14.3	12.4	13.3
Selenium	mg/kg	3.7 U	3.4 U	3.8 U	3.7
Silver	mg/kg	1.0 UJ	0.97 UJ	1.1 UJ	1.0 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	472	74.9 U	85 U	86.2 U
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	242000	2240 U	2510 U	2550 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	93 J	44	97	86
Benzene	ug/kg	180	19	4.9 U	4.7 U
Bromodichloromethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Bromoform	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Bromomethane	ug/kg	6.8 U	5.6 UJ	4.9 UJ	4.7 UJ
2-Butanone	ug/kg	14 U	11 U	12	10
Carbon Disulfide	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Carbon Tetrachloride	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Chlorobenzene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Chloroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U

Analysis/ Analyte	Units	117-__	118-__	119-__	119-FD
Chloroform	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Chloromethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Cyclohexane	ug/kg	41	5.6 U	4.9 U	4.7 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Dibromochloromethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,2-Dibromoethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,2-Dichlorobenzene	ug/kg	8.0	5.6 U	4.9 U	4.7 U
1,3-Dichlorobenzene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,4-Dichlorobenzene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Dichlorodifluoromethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1-Dichloroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,2-Dichloroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1-Dichloroethene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
cis-1,2-Dichloroethene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
trans-1,2-Dichloroethene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,2-Dichloropropane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
cis-1,3-Dichloropropene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
trans-1,3-Dichloropropene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Ethyl Benzene	ug/kg	23	5.6 U	4.9 U	4.7 U
2-Hexanone	ug/kg	6.8 UJ	5.6 U	4.9 U	4.7 U
Isopropylbenzene	ug/kg	270	5.6 U	4.9 U	4.7 U
Methyl Acetate	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Methyl tert-butyl ether	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Methylcyclohexane	ug/kg	290	13	4.9 U	4.7 U
Methylene Chloride	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
4-Methyl-2-Pentanone	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Naphthalene	ug/kg	79	11 U	9.9 U	9.3 U
Styrene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1,2,2-Tetrachloroethane	ug/kg	9.0	5.6 U	4.9 U	4.7 U
Tetrachloroethene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Toluene	ug/kg	9.4	5.6 U	4.9 U	4.7 U
1,2,3-Trichlorobenzene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,2,4-Trichlorobenzene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1,1-Trichloroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1,2-Trichloroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Trichloroethene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Trichlorofluoromethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
Vinyl Chloride	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U
m and/or p-Xylene	ug/kg	21	11 U	9.9 U	9.3 U
o-Xylene	ug/kg	6.8 U	5.6 U	4.9 U	4.7 U

Analysis/ Analyte	Units	120-__	121-__	122-__	123-__
1 Percent Solid					
Solids, percent	%	88.6	78.4	79.5	79.4
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	960 U	240 U	230 U	1100
Acenaphthylene	ug/kg	960 U	240 U	230 U	230 U
Acetophenone	ug/kg	960 U	240 U	230 U	760 J
Anthracene	ug/kg	1200	240 U	230 U	960
Atrazine	ug/kg	960 U	240 U	230 U	230 U
Benzaldehyde	ug/kg	960 U	240 U	230 U	230 U
Benzo(a)anthracene	ug/kg	2100	240 U	230 U	7900
Benzo(a)pyrene	ug/kg	1700	240 U	230 U	9600
Benzo(b)fluoranthene	ug/kg	2800	240 U	230 U	11000
Benzo(g,h,i)perylene	ug/kg	1200	240 U	230 U	6800
Benzo(k)fluoranthene	ug/kg	1000	240 U	230 U	3900 J
Biphenyl	ug/kg	960 U	240 U	230 U	370
bis(2-Chloroethoxy)methane	ug/kg	960 U	240 U	230 U	230 U
bis(2-Chloroethyl)ether	ug/kg	960 U	240 U	230 U	230 U
bis(2-Ethylhexyl)phthalate	ug/kg	2500	260	230 U	8800
4-Bromophenyl-phenylether	ug/kg	960 U	240 U	230 U	230 U
Butylbenzylphthalate	ug/kg	960 U	240 U	230 U	230 U
Caprolactam	ug/kg	960 U	240 U	230 U	230 U
Carbazole	ug/kg	960 U	240 U	230 U	230 U
4-Chloro-3-methylphenol	ug/kg	960 U	240 U	230 U	230 U
4-Chloroaniline	ug/kg	960 U	240 U	230 U	230 U
2-Chloronaphthalene	ug/kg	960 U	240 U	230 U	230 U
2-Chlorophenol	ug/kg	960 U	240 U	230 U	230 U
4-Chlorophenyl-phenylether	ug/kg	960 U	240 U	230 U	230 U
Chrysene	ug/kg	2600	240 U	230 U	9800
Di-n-butylphthalate	ug/kg	960 U	240 U	230 U	230 U
Di-n-octylphthalate	ug/kg	960 U	240 U	230 U	230 U
Dibenz(a,h)anthracene	ug/kg	960 U	240 U	230 U	2300
Dibenzofuran	ug/kg	960 U	240 U	230 U	230 U
3,3'-Dichlorobenzidine	ug/kg	960 U	240 U	230 U	230 U
2,4-Dichlorophenol	ug/kg	960 U	240 U	230 U	230 U
Diethylphthalate	ug/kg	960 U	240 U	230 U	230 U
2,4-Dimethylphenol	ug/kg	960 U	240 U	230 U	230 U
Dimethylphthalate	ug/kg	960 U	240 U	230 U	230 U
4,6-Dinitro-2-methylphenol	ug/kg	1900 U	460 U	440 U	450 U
2,4-Dinitrophenol	ug/kg	1900 U	460 U	440 U	450 U
2,4-Dinitrotoluene	ug/kg	960 U	240 U	230 U	230 U
2,6-Dinitrotoluene	ug/kg	960 U	240 U	230 U	230 U
Fluoranthene	ug/kg	5200	240 U	230 U	11000
Fluorene	ug/kg	960 U	240 U	230 U	1000
Hexachlorobenzene	ug/kg	960 U	240 U	230 U	230 U
Hexachlorobutadiene	ug/kg	960 U	240 U	230 U	230 U
Hexachlorocyclopentadiene	ug/kg	960 U	240 U	230 U	230 U

Analysis/ Analyte	Units	120-__	121-__	122-__	123-__
Hexachloroethane	ug/kg	960 U	240 U	230 U	230 U
Indeno(1,2,3-cd)pyrene	ug/kg	980	240 U	230 U	5200
Isophorone	ug/kg	960 U	240 U	230 U	230 U
2-Methylnaphthalene	ug/kg	9700	940	230 U	43000
2-Methylphenol	ug/kg	960 U	240 U	230 U	230 U
4-Methylphenol	ug/kg	960 U	240 U	230 U	230 U
Naphthalene	ug/kg	960 U	240 U	230 U	230 U
2-Nitroaniline	ug/kg	1900 U	460 U	440 U	450 U
3-Nitroaniline	ug/kg	1900 U	460 U	440 U	450 U
4-Nitroaniline	ug/kg	1900 U	460 U	440 U	450 U
Nitrobenzene	ug/kg	960 U	240 U	230 U	230 U
2-Nitrophenol	ug/kg	960 U	240 U	230 U	230 U
4-Nitrophenol	ug/kg	1900 U	460 U	440 U	450 U
N-nitroso-di-n-propylamine	ug/kg	960 U	240 U	230 U	230 U
N-nitrosodiphenylamine	ug/kg	960 U	240 U	230 U	230 U
Pentachlorophenol	ug/kg	1900 U	8000	2300	450 U
Phenanthrene	ug/kg	10000	960	230 U	5000
Phenol	ug/kg	960 U	240 U	230 U	230 U
Pyrene	ug/kg	3600	240 U	230 U	11000
1,2,4,5-Tetrachlorobenzene	ug/kg	960 U	240 U	230 U	230 U
2,4,5-Trichlorophenol	ug/kg	960 U	240 U	230 U	230 U
2,4,6-Trichlorophenol	ug/kg	960 U	240 U	230 U	230 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	28.9	7.3	16.3	10.3
Barium	mg/kg	32.3	113	189	165
Cadmium	mg/kg	0.58	0.46 U	0.67	1.5
Chromium	mg/kg	9.1	11.6	21.5	16.3
Lead	mg/kg	26.4	8.6	19.1	262
Selenium	mg/kg	3.1 U	3.2 U	4.5	5.7
Silver	mg/kg	0.87 UJ	0.92 UJ	1.0 UJ	0.87 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	17300	322	3170	2890
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	370000	35000	205000	492000
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	1100 UJ	14 U	620 U	1300 UJ
Benzene	ug/kg	560 U	63	310 U	2300
Bromodichloromethane	ug/kg	560 U	6.9 U	310 U	630 U
Bromoform	ug/kg	560 U	6.9 U	310 U	630 U
Bromomethane	ug/kg	560 UJ	6.9 UJ	310 U	630 UJ
2-Butanone	ug/kg	1100 U	14 U	620 U	1300 U
Carbon Disulfide	ug/kg	560 U	6.9 U	310 U	630 U
Carbon Tetrachloride	ug/kg	560 U	6.9 U	310 U	630 U
Chlorobenzene	ug/kg	560 U	6.9 U	310 U	630 U
Chloroethane	ug/kg	560 U	6.9 U	310 U	630 U

Analysis/ Analyte	Units	120-__	121-__	122-__	123-__
Chloroform	ug/kg	560 U	6.9 U	310 U	630 U
Chloromethane	ug/kg	560 U	6.9 U	310 U	630 U
Cyclohexane	ug/kg	1600	250	1700	1700
1,2-Dibromo-3-Chloropropane	ug/kg	560 U	6.9 U	310 U	630 U
Dibromochloromethane	ug/kg	560 U	6.9 U	310 U	630 U
1,2-Dibromoethane	ug/kg	560 U	6.9 U	310 U	630 U
1,2-Dichlorobenzene	ug/kg	560 U	12	310 U	630 U
1,3-Dichlorobenzene	ug/kg	560 U	6.9 U	310 U	630 U
1,4-Dichlorobenzene	ug/kg	560 U	6.9 U	310 U	630 U
Dichlorodifluoromethane	ug/kg	560 U	6.9 U	310 U	630 U
1,1-Dichloroethane	ug/kg	560 U	48	310 U	630 U
1,2-Dichloroethane	ug/kg	560 U	6.9 U	310 U	630 U
1,1-Dichloroethene	ug/kg	560 U	6.9 U	310 U	630 U
cis-1,2-Dichloroethene	ug/kg	560 U	560 J	310 U	630 U
trans-1,2-Dichloroethene	ug/kg	560 U	6.9 U	310 U	630 U
1,2-Dichloropropane	ug/kg	560 U	6.9 U	310 U	630 U
cis-1,3-Dichloropropene	ug/kg	560 U	6.9 U	310 U	630 U
trans-1,3-Dichloropropene	ug/kg	560 U	6.9 U	310 U	630 U
Ethyl Benzene	ug/kg	560 U	190	930	640
2-Hexanone	ug/kg	560 U	6.9 U	310 U	630 U
Isopropylbenzene	ug/kg	560 U	42	310 U	4300
Methyl Acetate	ug/kg	560 U	6.9 U	310 U	630 U
Methyl tert-butyl ether	ug/kg	560 U	6.9 U	310 U	630 U
Methylcyclohexane	ug/kg	9600	870	6500	10000
Methylene Chloride	ug/kg	2600	18	3100	2600
4-Methyl-2-Pentanone	ug/kg	560 U	6.9 U	310 U	630 U
Naphthalene	ug/kg	2000	60	920	1700
Styrene	ug/kg	560 U	6.9 U	310 U	630 U
1,1,2,2-Tetrachloroethane	ug/kg	560 U	28	310 U	630 U
Tetrachloroethene	ug/kg	560 U	6.9 U	310 U	630 U
Toluene	ug/kg	560 U	710	2500	630 U
1,2,3-Trichlorobenzene	ug/kg	560 U	6.9 U	310 U	630 U
1,2,4-Trichlorobenzene	ug/kg	560 U	6.9 U	310 U	630 U
1,1,1-Trichloroethane	ug/kg	560 U	6.9 U	310 U	630 U
1,1,2-Trichloroethane	ug/kg	560 U	6.9 U	310 U	630 U
Trichloroethene	ug/kg	560 U	6.9 U	310 U	630 U
Trichlorofluoromethane	ug/kg	560 U	6.9 U	310 U	630 U
1,1,2-Trichlorotrifluoroethane	ug/kg	560 U	6.9 U	310 U	630 U
Vinyl Chloride	ug/kg	560 U	45	310 U	630 U
m and/or p-Xylene	ug/kg	4500	820	4000	1300 U
o-Xylene	ug/kg	2300	120	1100	630 U

Analysis/ Analyte	Units	124-__	125-__	126-__	127-__
1 Percent Solid					
Solids, percent	%	80.2	78.6	79.9	73.1
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	200 U	210 U	210 U	450
Acenaphthylene	ug/kg	200 U	210 U	210 U	230 U
Acetophenone	ug/kg	200 U	210 U	210 U	230 U
Anthracene	ug/kg	200 U	210 U	210 U	250
Atrazine	ug/kg	200 U	210 U	210 U	230 U
Benzaldehyde	ug/kg	200 U	210 U	210 U	230 U
Benzo(a)anthracene	ug/kg	200 U	210 U	210 U	360 J
Benzo(a)pyrene	ug/kg	200 U	210 U	210 U	230 U
Benzo(b)fluoranthene	ug/kg	200 U	210 U	210 U	230 U
Benzo(g,h,i)perylene	ug/kg	200 U	210 U	210 U	230 U
Benzo(k)fluoranthene	ug/kg	200 U	210 U	210 U	230 U
Biphenyl	ug/kg	200 U	210 U	210 U	230 U
bis(2-Chloroethoxy)methane	ug/kg	200 U	210 U	210 U	230 U
bis(2-Chloroethyl)ether	ug/kg	200 U	210 U	210 U	230 U
bis(2-Ethylhexyl)phthalate	ug/kg	470	210 U	210 U	1400
4-Bromophenyl-phenylether	ug/kg	200 U	210 U	210 U	230 U
Butylbenzylphthalate	ug/kg	200 U	210 U	210 U	230 U
Caprolactam	ug/kg	200 U	210 U	210 U	230 U
Carbazole	ug/kg	200 U	210 U	210 U	230 U
4-Chloro-3-methylphenol	ug/kg	200 U	210 U	210 U	230 U
4-Chloroaniline	ug/kg	200 U	210 U	210 U	230 U
2-Chloronaphthalene	ug/kg	200 U	210 U	210 U	230 U
2-Chlorophenol	ug/kg	200 U	210 U	210 U	230 U
4-Chlorophenyl-phenylether	ug/kg	200 U	210 U	210 U	230 U
Chrysene	ug/kg	200 U	210 U	210 U	420 J
Di-n-butylphthalate	ug/kg	200 U	210 U	210 U	230 U
Di-n-octylphthalate	ug/kg	200 U	210 U	210 U	230 U
Dibenz(a,h)anthracene	ug/kg	200 U	210 U	210 U	230 U
Dibenzofuran	ug/kg	200 U	210 U	210 U	380
3,3'-Dichlorobenzidine	ug/kg	200 U	210 U	210 U	230 U
2,4-Dichlorophenol	ug/kg	200 U	210 U	210 U	230 U
Diethylphthalate	ug/kg	200 U	210 U	210 U	230 U
2,4-Dimethylphenol	ug/kg	200 U	210 U	210 U	230 U
Dimethylphthalate	ug/kg	200 U	210 U	210 U	230 U
4,6-Dinitro-2-methylphenol	ug/kg	400 U	420 U	410 U	450 U
2,4-Dinitrophenol	ug/kg	400 U	420 U	410 U	450 U
2,4-Dinitrotoluene	ug/kg	200 U	210 U	210 U	230 U
2,6-Dinitrotoluene	ug/kg	200 U	210 U	210 U	230 U
Fluoranthene	ug/kg	310	210 U	210 U	430 J
Fluorene	ug/kg	200 U	210 U	210 U	450
Hexachlorobenzene	ug/kg	200 U	210 U	210 U	230 U
Hexachlorobutadiene	ug/kg	200 U	210 U	210 U	230 U
Hexachlorocyclopentadiene	ug/kg	200 U	210 U	210 U	230 U

Analysis/ Analyte	Units	124-__	125-__	126-__	127-__
Hexachloroethane	ug/kg	200 U	210 U	210 U	230 U
Indeno(1,2,3-cd)pyrene	ug/kg	200 U	210 U	210 U	230 U
Isophorone	ug/kg	200 U	210 U	210 U	230 U
2-Methylnaphthalene	ug/kg	14000	210 U	260	3400
2-Methylphenol	ug/kg	200 U	210 U	210 U	230 U
4-Methylphenol	ug/kg	200 U	210 U	210 U	230 U
Naphthalene	ug/kg	200 U	210 U	210 U	570
2-Nitroaniline	ug/kg	400 U	420 U	410 U	450 U
3-Nitroaniline	ug/kg	400 U	420 U	410 U	450 U
4-Nitroaniline	ug/kg	400 U	420 U	410 U	450 U
Nitrobenzene	ug/kg	200 U	210 U	210 U	230 U
2-Nitrophenol	ug/kg	200 U	210 U	210 U	230 U
4-Nitrophenol	ug/kg	400 U	420 U	410 U	450 U
N-nitroso-di-n-propylamine	ug/kg	200 U	210 U	210 U	230 U
N-nitrosodiphenylamine	ug/kg	200 U	210 U	210 U	230 U
Pentachlorophenol	ug/kg	400 U	420 U	410 U	450 U
Phenanthrene	ug/kg	1100	210 U	210 U	2000
Phenol	ug/kg	200 U	210 U	210 U	230 U
Pyrene	ug/kg	340	210 U	210 U	900 J
1,2,4,5-Tetrachlorobenzene	ug/kg	200 U	210 U	210 U	230 U
2,4,5-Trichlorophenol	ug/kg	200 U	210 U	210 U	230 U
2,4,6-Trichlorophenol	ug/kg	200 U	210 U	210 U	230 U
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	8.0	11.8	6.6	7.2
Barium	mg/kg	113	170	148	123
Cadmium	mg/kg	0.48 U	0.63	0.56	0.66
Chromium	mg/kg	14.5	16.4	16.2	15.7
Lead	mg/kg	14.3	16.0	10.9	11.8
Selenium	mg/kg	3.3 U	3.7	3.0 U	3.2 U
Silver	mg/kg	0.96 UJ	0.95 UJ	0.87 UJ	0.90 UJ
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	3280	85.4 U	287 J	2220
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	481000	2540 U	623000	382000
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	610 U	58 U	59 U	350 UJ
Benzene	ug/kg	1300	270	400 J	630
Bromodichloromethane	ug/kg	300 U	29 U	30 U	170 U
Bromoform	ug/kg	300 U	29 U	30 U	170 U
Bromomethane	ug/kg	300 U	29 U	30 U	170 UJ
2-Butanone	ug/kg	610 U	58 U	59 U	350 U
Carbon Disulfide	ug/kg	300 U	29 U	30 U	170 U
Carbon Tetrachloride	ug/kg	300 U	29 U	30 U	170 U
Chlorobenzene	ug/kg	300 U	29 U	30 U	170 U
Chloroethane	ug/kg	300 U	29 U	30 U	170 U

Analysis/ Analyte	Units	124-__	125-__	126-__	127-__
Chloroform	ug/kg	300 U	29 U	30 U	170 U
Chloromethane	ug/kg	300 U	29 U	30 U	170 U
Cyclohexane	ug/kg	1700	750	320 J	1400
1,2-Dibromo-3-Chloropropane	ug/kg	300 U	29 U	30 U	170 U
Dibromochloromethane	ug/kg	300 U	29 U	30 U	170 U
1,2-Dibromoethane	ug/kg	300 U	29 U	30 U	170 U
1,2-Dichlorobenzene	ug/kg	300 U	29 U	30 U	340
1,3-Dichlorobenzene	ug/kg	300 U	29 U	30 U	170 U
1,4-Dichlorobenzene	ug/kg	300 U	29 U	30 U	170 U
Dichlorodifluoromethane	ug/kg	300 U	29 U	30 U	170 U
1,1-Dichloroethane	ug/kg	300 U	29 U	30 U	170 U
1,2-Dichloroethane	ug/kg	300 U	29 U	30 U	170 U
1,1-Dichloroethene	ug/kg	300 U	29 U	30 U	170 U
cis-1,2-Dichloroethene	ug/kg	300 U	29 U	30 U	170 U
trans-1,2-Dichloroethene	ug/kg	300 U	29 U	30 U	170 U
1,2-Dichloropropane	ug/kg	300 U	29 U	30 U	170 U
cis-1,3-Dichloropropene	ug/kg	300 U	29 U	30 U	170 U
trans-1,3-Dichloropropene	ug/kg	300 U	29 U	30 U	170 U
Ethyl Benzene	ug/kg	410	110	70 J	640
2-Hexanone	ug/kg	300 U	29 U	30 U	170 U
Isopropylbenzene	ug/kg	2100	600	280 J	4900
Methyl Acetate	ug/kg	300 U	29 U	30 U	170 U
Methyl tert-butyl ether	ug/kg	300 U	29 U	30 U	170 U
Methylcyclohexane	ug/kg	7200	2100	960 J	5500
Methylene Chloride	ug/kg	3000	29 U	30 U	1500
4-Methyl-2-Pentanone	ug/kg	300 U	29 U	30 U	170 U
Naphthalene	ug/kg	770	88	59 U	760
Styrene	ug/kg	300 U	29 U	30 U	170 U
1,1,2,2-Tetrachloroethane	ug/kg	300 U	29 U	30 U	170 U
Tetrachloroethene	ug/kg	300 U	29 U	30 U	170 U
Toluene	ug/kg	300 U	29 U	30 U	490
1,2,3-Trichlorobenzene	ug/kg	300 U	29 U	30 U	170 U
1,2,4-Trichlorobenzene	ug/kg	300 U	29 U	30 U	170 U
1,1,1-Trichloroethane	ug/kg	300 U	29 U	30 U	170 U
1,1,2-Trichloroethane	ug/kg	300 U	29 U	30 U	170 U
Trichloroethene	ug/kg	300 U	29 U	30 U	170 U
Trichlorofluoromethane	ug/kg	300 U	29 U	30 U	170 U
1,1,2-Trichlorotrifluoroethane	ug/kg	300 U	29 U	30 U	170 U
Vinyl Chloride	ug/kg	300 U	29 U	30 U	170 U
m and/or p-Xylene	ug/kg	610 U	58 U	59 U	350 U
o-Xylene	ug/kg	300 U	29 U	30 U	170 U

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
1 Percent Solid					
Solids, percent	%	75.1			
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	230 U			
Acenaphthylene	ug/kg	230 U			
Acetophenone	ug/kg	230 U			
Anthracene	ug/kg	230 U			
Atrazine	ug/kg	230 U			
Benzaldehyde	ug/kg	230 U			
Benzo(a)anthracene	ug/kg	230 U			
Benzo(a)pyrene	ug/kg	230 U			
Benzo(b)fluoranthene	ug/kg	230 U			
Benzo(g,h,i)perylene	ug/kg	230 U			
Benzo(k)fluoranthene	ug/kg	230 U			
Biphenyl	ug/kg	230 U			
bis(2-Chloroethoxy)methane	ug/kg	230 U			
bis(2-Chloroethyl)ether	ug/kg	230 U			
bis(2-Ethylhexyl)phthalate	ug/kg	690			
4-Bromophenyl-phenylether	ug/kg	230 U			
Butylbenzylphthalate	ug/kg	230 U			
Caprolactam	ug/kg	230 U			
Carbazole	ug/kg	230 U			
4-Chloro-3-methylphenol	ug/kg	230 U			
4-Chloroaniline	ug/kg	230 U			
2-Chloronaphthalene	ug/kg	230 U			
2-Chlorophenol	ug/kg	230 U			
4-Chlorophenyl-phenylether	ug/kg	230 U			
Chrysene	ug/kg	230 U			
Di-n-butylphthalate	ug/kg	230 U			
Di-n-octylphthalate	ug/kg	230 U			
Dibenz(a,h)anthracene	ug/kg	230 U			
Dibenzofuran	ug/kg	230 U			
3,3'-Dichlorobenzidine	ug/kg	230 U			
2,4-Dichlorophenol	ug/kg	230 U			
Diethylphthalate	ug/kg	230 U			
2,4-Dimethylphenol	ug/kg	230 U			
Dimethylphthalate	ug/kg	230 U			
4,6-Dinitro-2-methylphenol	ug/kg	450 U			
2,4-Dinitrophenol	ug/kg	450 U			
2,4-Dinitrotoluene	ug/kg	230 U			
2,6-Dinitrotoluene	ug/kg	230 U			
Fluoranthene	ug/kg	230 U			
Fluorene	ug/kg	230 U			
Hexachlorobenzene	ug/kg	230 U			
Hexachlorobutadiene	ug/kg	230 U			
Hexachlorocyclopentadiene	ug/kg	230 U			

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
Hexachloroethane	ug/kg	230 U			
Indeno(1,2,3-cd)pyrene	ug/kg	230 U			
Isophorone	ug/kg	230 U			
2-Methylnaphthalene	ug/kg	1100			
2-Methylphenol	ug/kg	230 U			
4-Methylphenol	ug/kg	230 U			
Naphthalene	ug/kg	280			
2-Nitroaniline	ug/kg	450 U			
3-Nitroaniline	ug/kg	450 U			
4-Nitroaniline	ug/kg	450 U			
Nitrobenzene	ug/kg	230 U			
2-Nitrophenol	ug/kg	230 U			
4-Nitrophenol	ug/kg	450 U			
N-nitroso-di-n-propylamine	ug/kg	230 U			
N-nitrosodiphenylamine	ug/kg	230 U			
Pentachlorophenol	ug/kg	450 U			
Phenanthrene	ug/kg	870			
Phenol	ug/kg	230 U			
Pyrene	ug/kg	410			
1,2,4,5-Tetrachlorobenzene	ug/kg	230 U			
2,4,5-Trichlorophenol	ug/kg	230 U			
2,4,6-Trichlorophenol	ug/kg	230 U			
1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES					
Arsenic	mg/kg	7.2			
Barium	mg/kg	153			
Cadmium	mg/kg	0.87 J			
Chromium	mg/kg	16.3			
Lead	mg/kg	21.1			
Selenium	mg/kg	3.4 U			
Silver	mg/kg	0.99 UJ			
1 TPH Semi-Volatile in Soil by GC/FID					
Extractable TPH	mg/kg	260 J			
1 TPH Volatiles in Soil by GC/MS					
Purgeable TPH	ug/kg	260000			
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	680 U			
Benzene	ug/kg	620			
Bromodichloromethane	ug/kg	340 U			
Bromoform	ug/kg	340 U			
Bromomethane	ug/kg	340 U			
2-Butanone	ug/kg	680 U			
Carbon Disulfide	ug/kg	340 U			
Carbon Tetrachloride	ug/kg	340 U			
Chlorobenzene	ug/kg	340 U			
Chloroethane	ug/kg	340 U			

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
Chloroform	ug/kg	340 U			
Chloromethane	ug/kg	340 U			
Cyclohexane	ug/kg	1300			
1,2-Dibromo-3-Chloropropane	ug/kg	340 U			
Dibromochloromethane	ug/kg	340 U			
1,2-Dibromoethane	ug/kg	340 U			
1,2-Dichlorobenzene	ug/kg	360			
1,3-Dichlorobenzene	ug/kg	340 U			
1,4-Dichlorobenzene	ug/kg	340 U			
Dichlorodifluoromethane	ug/kg	340 U			
1,1-Dichloroethane	ug/kg	340 U			
1,2-Dichloroethane	ug/kg	340 U			
1,1-Dichloroethene	ug/kg	340 U			
cis-1,2-Dichloroethene	ug/kg	340 U			
trans-1,2-Dichloroethene	ug/kg	340 U			
1,2-Dichloropropane	ug/kg	340 U			
cis-1,3-Dichloropropene	ug/kg	340 U			
trans-1,3-Dichloropropene	ug/kg	340 U			
Ethyl Benzene	ug/kg	490			
2-Hexanone	ug/kg	340 U			
Isopropylbenzene	ug/kg	5800			
Methyl Acetate	ug/kg	340 U			
Methyl tert-butyl ether	ug/kg	340 U			
Methylcyclohexane	ug/kg	5700			
Methylene Chloride	ug/kg	3400			
4-Methyl-2-Pentanone	ug/kg	340 U			
Naphthalene	ug/kg	710			
Styrene	ug/kg	340 U			
1,1,2,2-Tetrachloroethane	ug/kg	340 U			
Tetrachloroethene	ug/kg	340 U			
Toluene	ug/kg	430			
1,2,3-Trichlorobenzene	ug/kg	340 U			
1,2,4-Trichlorobenzene	ug/kg	340 U			
1,1,1-Trichloroethane	ug/kg	340 U			
1,1,2-Trichloroethane	ug/kg	340 U			
Trichloroethene	ug/kg	340 U			
Trichlorofluoromethane	ug/kg	340 U			
1,1,2-Trichlorotrifluoroethane	ug/kg	340 U			
Vinyl Chloride	ug/kg	340 U			
m and/or p-Xylene	ug/kg	680 U			
o-Xylene	ug/kg	340 U			
1 Metals - Dissolved, in Water by ICP/MS					
Arsenic	ug/L			88.1	88.1
Barium	ug/L			674	849
Cadmium	ug/L			1.0 U	1.0 U

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
Chromium	ug/L			2.0 U	2.0 U
Lead	ug/L			1.7	1.0 U
Selenium	ug/L			5.0 U	5.0 U
Silver	ug/L			1.0 U	1.0 U
1 Metals in Water by ICP/MS					
Arsenic	ug/L		23.9	133	84.1
Barium	ug/L		3110	1170	835
Cadmium	ug/L		12.6	2.3	1.0 U
Chromium	ug/L		103	40.3	2.2
Lead	ug/L		369	369	2.2
Selenium	ug/L		10.0 U	5.0 U	5.0 U
Silver	ug/L		1.0 U	1.0 U	1.0 U
1 Semi-Volatile Organic Compounds in Water					
Acenaphthene	ug/L		5.0 U	5.0 U	5.0 U
Acenaphthylene	ug/L		5.0 U	5.0 U	5.0 U
Acetophenone	ug/L		5.0 U	5.0 U	5.0 U
Anthracene	ug/L		5.0 U	5.0 U	5.0 U
Atrazine	ug/L		5.0 U	5.0 U	5.0 U
Benzaldehyde	ug/L		5.0 U	5.0 U	5.0 U
Benzo(a)anthracene	ug/L		5.0 U	5.0 U	5.0 U
Benzo(a)pyrene	ug/L		5.0 U	5.0 U	5.0 U
Benzo(b)fluoranthene	ug/L		5.0 U	5.0 U	5.0 U
Benzo(g,h,i)perylene	ug/L		5.0 U	5.0 U	5.0 U
Benzo(k)fluoranthene	ug/L		5.0 U	5.0 U	5.0 U
Biphenyl	ug/L		5.0 U	5.0 U	5.0 U
bis(2-Chloroethoxy)methane	ug/L		5.0 U	5.0 U	5.0 U
bis(2-Chloroethyl)ether	ug/L		5.0 U	5.0 U	5.0 U
bis(2-Ethylhexyl)phthalate	ug/L		5.0 U	5.0 U	5.0 U
4-Bromophenyl-phenylether	ug/L		5.0 U	5.0 U	5.0 U
Butylbenzylphthalate	ug/L		5.0 U	5.0 U	5.0 U
Caprolactam	ug/L		5.0 U	5.0 U	5.0 U
Carbazole	ug/L		5.0 U	5.0 U	5.0 U
4-Chloro-3-methylphenol	ug/L		5.0 U	5.0 U	5.0 U
4-Chloroaniline	ug/L		5.0 U	5.0 U	5.0 U
2-Chloronaphthalene	ug/L		5.0 U	5.0 U	5.0 U
2-Chlorophenol	ug/L		5.0 U	6.1	8.8
4-Chlorophenyl-phenylether	ug/L		5.0 U	5.0 U	5.0 U
Chrysene	ug/L		5.0 U	5.0 U	5.0 U
Di-n-butylphthalate	ug/L		5.0 U	5.0 U	5.0 U
Di-n-octylphthalate	ug/L		5.0 U	5.0 U	5.0 U
Dibenz(a,h)anthracene	ug/L		5.0 U	5.0 U	5.0 U
Dibenzofuran	ug/L		5.0 U	5.0 U	5.0 U
3,3'-Dichlorobenzidine	ug/L		5.0 U	5.0 U	5.0 U
2,4-Dichlorophenol	ug/L		5.0 U	5.0 U	5.0 U
Diethylphthalate	ug/L		5.0 U	5.0 U	5.0 U

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
2,4-Dimethylphenol	ug/L		5.0 U	5.0 U	5.0 U
Dimethylphthalate	ug/L		5.0 U	5.0 U	5.0 U
4,6-Dinitro-2-methylphenol	ug/L		10 U	10 U	10 U
2,4-Dinitrophenol	ug/L		10 U	10 U	10 U
2,4-Dinitrotoluene	ug/L		5.0 U	5.0 U	5.0 U
2,6-Dinitrotoluene	ug/L		5.0 U	5.0 U	5.0 U
Fluoranthene	ug/L		5.0 U	5.0 U	5.0 U
Fluorene	ug/L		5.0 U	5.0 U	5.0 U
Hexachlorobenzene	ug/L		5.0 U	5.0 U	5.0 U
Hexachlorobutadiene	ug/L		5.0 U	5.0 U	5.0 U
Hexachlorocyclopentadiene	ug/L		5.0 U	5.0 U	5.0 U
Hexachloroethane	ug/L		5.0 U	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L		5.0 U	5.0 U	5.0 U
Isophorone	ug/L		5.0 U	5.0 U	5.0 U
2-Methylnaphthalene	ug/L		76	20	22
2-Methylphenol	ug/L		5.0 U	5.0 U	5.0 U
4-Methylphenol	ug/L		5.0 U	5.0 U	5.0 U
Naphthalene	ug/L		5.0 U	9.5	8.4
2-Nitroaniline	ug/L		10 U	10 U	10 U
3-Nitroaniline	ug/L		10 U	10 U	10 U
4-Nitroaniline	ug/L		10 U	10 U	10 U
Nitrobenzene	ug/L		5.0 U	5.0 U	5.0 U
2-Nitrophenol	ug/L		5.0 U	5.0 U	5.0 U
4-Nitrophenol	ug/L		10 U	10 U	10 U
N-nitroso-di-n-propylamine	ug/L		5.0 U	5.0 U	5.0 U
N-nitrosodiphenylamine	ug/L		5.0 U	5.0 U	5.0 U
Pentachlorophenol	ug/L		10 U	10 U	10 U
Phenanthrene	ug/L		6.1	5.0 U	5.0 U
Phenol	ug/L		5.0 U	5.0 U	5.0 U
Pyrene	ug/L		5.0 U	5.0 U	5.0 U
1,2,4,5-Tetrachlorobenzene	ug/L		5.0 U	5.0 U	5.0 U
2,3,4,6-Tetrachlorophenol	ug/L		5.0 U	5.0 U	5.0 U
2,4,5-Trichlorophenol	ug/L		5.0 U	5.0 U	5.0 U
2,4,6-Trichlorophenol	ug/L		5.0 U	5.0 U	5.0 U
1 TPH Semi-volatile in Water by GC/FID					
Extractable TPH	mg/L		21.7	4.17	2 U
1 TPH Volatiles in water by GC/MS					
Purgeable TPH	ug/L			29900	22300
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L		51 J	N/A O	5.0 U
Benzene	ug/L		1.6	820 J	310
Bromodichloromethane	ug/L		1.0 U	1.0 U	1.0 U
Bromoform	ug/L		1.0 U	1.0 U	1.0 U
Bromomethane	ug/L		1.0 U	1.0 UJ	1.0 U
2-Butanone	ug/L		13	N/A O	5.0 U

Analysis/ Analyte	Units	128-__	201-__	202-__	204-__
Carbon Disulfide	ug/L		1.0 U	1.0 UJ	1.0 U
Carbon Tetrachloride	ug/L		1.0 U	1.0 UJ	1.0 U
Chlorobenzene	ug/L		1.0 U	20 J	2300
Chloroethane	ug/L		1.0 U	2.4 J	1.0 U
Chloroform	ug/L		1.0 U	1.0 UJ	1.0 U
Chloromethane	ug/L		1.0 U	1.0 UJ	1.0 U
Cyclohexane	ug/L		1.2	230 J	32
1,2-Dibromo-3-Chloropropane	ug/L		5.0 U	N/A O	5.0 U
Dibromochloromethane	ug/L		1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L		1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L		1.0 U	1.0 UJ	26
1,3-Dichlorobenzene	ug/L		1.0 U	1.0 UJ	1.5
1,4-Dichlorobenzene	ug/L		1.0 U	1.0 UJ	14
Dichlorodifluoromethane	ug/L		1.0 U	1.0 UJ	1.0 U
1,1-Dichloroethane	ug/L		3.5	1.0 UJ	1.0 U
1,2-Dichloroethane	ug/L		1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L		3.2	1.0 UJ	1.0 U
cis-1,2-Dichloroethene	ug/L		56 J	1.0 UJ	12
trans-1,2-Dichloroethene	ug/L		1.0 U	1.0 UJ	1.0 U
1,2-Dichloropropane	ug/L		1.0 U	1.0 UJ	1.0 U
cis-1,3-Dichloropropene	ug/L		1.0 U	1.0 UJ	1.0 U
trans-1,3-Dichloropropene	ug/L		1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L		1.0 U	150	320
2-Hexanone	ug/L		5.0 U	N/A O	5.0 U
Isopropylbenzene	ug/L		1.1	140 J	36
Methyl Acetate	ug/L		5.0 U	5.0 UJ	5.0 U
Methyl tert-butyl ether	ug/L		1.0 U	1.0 UJ	1.0 U
Methylcyclohexane	ug/L		14	190	38
Methylene Chloride	ug/L		1.0 U	1.0 UJ	1.0 U
4-Methyl-2-Pentanone	ug/L		5.0 U	N/A O	5.0 U
Naphthalene	ug/L		2.0 U	120 J	24
Styrene	ug/L		1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L		1.0 U	N/A O	1.0 U
Tetrachloroethene	ug/L		8.4	1.0 U	1.0 U
Toluene	ug/L		1.0 U	14 J	910
1,2,3-Trichlorobenzene	ug/L		1.0 U	1.0 UJ	1.0 U
1,2,4-Trichlorobenzene	ug/L		1.0 U	1.0 UJ	1.0 U
1,1,1-Trichloroethane	ug/L		1.0 U	1.0 UJ	1.0 U
1,1,2-Trichloroethane	ug/L		1.0 U	N/A O	1.0 U
Trichloroethene	ug/L		18	1.0 UJ	1.0 U
Trichlorofluoromethane	ug/L		1.0 U	1.0 UJ	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L		1.0 U	1.0 UJ	1.0 U
Vinyl Chloride	ug/L		13	1.0 UJ	1.9
m and/or p-Xylene	ug/L		2.0 U	98	1900
o-Xylene	ug/L		1.0 U	14	330

Analysis/ Analyte	Units	204-FD	205-__	206-__	207-__
1 Metals - Dissolved, in Water by ICP/MS					
Arsenic	ug/L	87.4	141	9.2	4.7
Barium	ug/L	833	272	100	396
Cadmium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	ug/L	2.0 U	3.1	2.0 U	2.0 U
Lead	ug/L	1.0 U	5.7	1.0 U	1.0 U
Selenium	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Silver	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1 Metals in Water by ICP/MS					
Arsenic	ug/L	83.3	119	10.1	86.5 J
Barium	ug/L	814	226	109	5600
Cadmium	ug/L	1.0 U	1.0 U	1.0 U	81.4
Chromium	ug/L	2.0 U	9.1	2.0 U	204 J
Lead	ug/L	2.1	29.0	1.0	8840
Selenium	ug/L	5.0 U	5.0 U	5.0 U	31.7 J
Silver	ug/L	1.0 U	1.0 U	1.0 U	7.4
1 Semi-Volatile Organic Compounds in Water					
Acenaphthene	ug/L	10 U	25 U	5.0 U	5.0 U
Acenaphthylene	ug/L	10 U	25 U	5.0 U	5.0 U
Acetophenone	ug/L	10 U	25 U	5.0 U	5.0 U
Anthracene	ug/L	10 U	25 U	5.0 U	5.0 U
Atrazine	ug/L	10 U	25 U	5.0 U	5.0 U
Benzaldehyde	ug/L	10 U	25 U	5.0 U	5.0 U
Benzo(a)anthracene	ug/L	10 U	25 U	5.0 U	5.0 U
Benzo(a)pyrene	ug/L	10 U	25 U	5.0 UJ	5.0 U
Benzo(b)fluoranthene	ug/L	10 U	25 U	5.0 UJ	5.0 U
Benzo(g,h,i)perylene	ug/L	10 UJ	25 UJ	5.0 U	5.0 U
Benzo(k)fluoranthene	ug/L	10 U	25 U	5.0 UJ	5.0 U
Biphenyl	ug/L	10 U	25 U	5.0 U	5.0 U
bis(2-Chloroethoxy)methane	ug/L	10 U	25 U	5.0 U	5.0 U
bis(2-Chloroethyl)ether	ug/L	10 U	25 U	5.0 U	5.0 U
bis(2-Ethylhexyl)phthalate	ug/L	10 U	25 U	5.0 U	5.0 U
4-Bromophenyl-phenylether	ug/L	10 U	25 U	5.0 U	5.0 U
Butylbenzylphthalate	ug/L	10 U	25 U	5.0 U	5.0 U
Caprolactam	ug/L	10 U	25 U	5.0 U	5.0 U
Carbazole	ug/L	10 U	25 U	5.0 U	5.0 U
4-Chloro-3-methylphenol	ug/L	10 U	25 U	5.0 U	5.0 U
4-Chloroaniline	ug/L	10 U	25 U	5.0 U	5.0 U
2-Chloronaphthalene	ug/L	10 U	25 U	5.0 U	5.0 U
2-Chlorophenol	ug/L	10 U	25 U	5.0 U	5.0 U
4-Chlorophenyl-phenylether	ug/L	10 U	25 U	5.0 U	5.0 U
Chrysene	ug/L	10 U	25 U	5.0 U	5.0 U
Di-n-butylphthalate	ug/L	10 U	25 U	5.0 U	5.0 U
Di-n-octylphthalate	ug/L	10 U	25 U	5.0 U	5.0 U
Dibenz(a,h)anthracene	ug/L	10 U	25 U	5.0 UJ	5.0 U
Dibenzofuran	ug/L	10 U	25 U	5.0 U	5.0 U

Analysis/ Analyte	Units	204-FD	205-__	206-__	207-__
3,3'-Dichlorobenzidine	ug/L	10 U	25 U	5.0 U	5.0 U
2,4-Dichlorophenol	ug/L	10 U	25 U	5.0 U	5.0 U
Diethylphthalate	ug/L	10 U	25 U	5.0 U	5.0 U
2,4-Dimethylphenol	ug/L	11	25 U	5.0 U	5.0 U
Dimethylphthalate	ug/L	10 U	25 U	5.0 U	5.0 U
4,6-Dinitro-2-methylphenol	ug/L	20 U	50 U	10 U	10 U
2,4-Dinitrophenol	ug/L	20 U	50 U	10 U	10 U
2,4-Dinitrotoluene	ug/L	10 U	25 U	5.0 U	5.0 U
2,6-Dinitrotoluene	ug/L	10 U	25 U	5.0 U	5.0 U
Fluoranthene	ug/L	10 U	25 U	5.0 U	5.0 U
Fluorene	ug/L	10 U	25 U	5.0 U	5.0 U
Hexachlorobenzene	ug/L	10 U	25 U	5.0 U	5.0 U
Hexachlorobutadiene	ug/L	10 U	25 U	5.0 U	5.0 U
Hexachlorocyclopentadiene	ug/L	10 U	25 U	5.0 U	5.0 U
Hexachloroethane	ug/L	10 U	25 U	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	10 U	25 U	5.0 UJ	5.0 U
Isophorone	ug/L	10 U	25 U	5.0 U	5.0 U
2-Methylnaphthalene	ug/L	88	160	5.0 U	31
2-Methylphenol	ug/L	10 U	25 U	5.0 U	5.0 U
4-Methylphenol	ug/L	10 U	30	5.0 U	5.0 U
Naphthalene	ug/L	44	120	5.0 U	5.0 U
2-Nitroaniline	ug/L	20 U	50 U	10 U	10 U
3-Nitroaniline	ug/L	20 U	50 U	10 U	10 U
4-Nitroaniline	ug/L	20 U	50 U	10 U	10 U
Nitrobenzene	ug/L	10 U	25 U	5.0 U	5.0 U
2-Nitrophenol	ug/L	10 U	25 U	5.0 U	5.0 U
4-Nitrophenol	ug/L	20 U	50 U	10 U	10 U
N-nitroso-di-n-propylamine	ug/L	10 U	25 U	5.0 U	5.0 U
N-nitrosodiphenylamine	ug/L	10 U	25 U	5.0 U	5.0 U
Pentachlorophenol	ug/L	20 UJ	4500 J	10 U	10 U
Phenanthrene	ug/L	10 U	69	5.0 U	5.0 U
Phenol	ug/L	43	25 U	5.0 U	5.0 U
Pyrene	ug/L	10 U	25 U	5.0 U	5.0 U
1,2,4,5-Tetrachlorobenzene	ug/L	10 U	25 U	5.0 U	5.0 U
2,3,4,6-Tetrachlorophenol	ug/L	10 U	110	5.0 U	5.0 U
2,4,5-Trichlorophenol	ug/L	10 U	25 U	5.0 U	5.0 U
2,4,6-Trichlorophenol	ug/L	10 U	25 U	5.0 U	5.0 U
1 TPH Semi-volatile in Water by GC/FID					
Extractable TPH	mg/L	2 U	99.7	2 U	2.69
1 TPH Volatiles in water by GC/MS					
Purgeable TPH	ug/L	24200	5890	40 U	3190
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	8.4	5.0 U
Benzene	ug/L	390	18	1.0 U	220
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	204-FD	205-__	206-__	207-__
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	2600	7.2	1.0 U	4.5
Chloroethane	ug/L	1.0 U	1.0 U	1.4	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	33	56	1.0 U	28
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	25	18	1.0 U	7.5
1,3-Dichlorobenzene	ug/L	1.5	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	14	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	9.1	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	12	140 J	1.0 U	2.7
trans-1,2-Dichloroethene	ug/L	1.0 U	2.8	1.0 U	1.2
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	280	64	1.0 U	19
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	51	15	1.0 U	140
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	45	91	1.0 U	33
Methylene Chloride	ug/L	1.0 U	3.2	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	24	57 J	4.5	3.8
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	950	210	3.0	3.4
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	204-FD	205-__	206-__	207-__
Vinyl Chloride	ug/L	1.7	6.2	1.0 U	1.8
m and/or p-Xylene	ug/L	2100	320	2.0 U	2.0 U
o-Xylene	ug/L	280	73	1.0 U	1.5

Analysis/ Analyte	Units	214-FB	215-FB
1 Metals - Dissolved, in Water by ICP/MS			
Arsenic	ug/L	1.0 U	
Barium	ug/L	10.0 U	
Cadmium	ug/L	1.0 U	
Chromium	ug/L	2.0 U	
Lead	ug/L	1.0 U	
Selenium	ug/L	5.0 U	
Silver	ug/L	1.0 U	
1 Metals in Water by ICP/MS			
Arsenic	ug/L	1.0 U	
Barium	ug/L	10.0 U	
Cadmium	ug/L	1.0 U	
Chromium	ug/L	2.0 U	
Lead	ug/L	1.0 U	
Selenium	ug/L	5.0 U	
Silver	ug/L	1.0 U	
1 Semi-Volatile Organic Compounds in Water			
Acenaphthene	ug/L	5.0 U	
Acenaphthylene	ug/L	5.0 U	
Acetophenone	ug/L	5.0 U	
Anthracene	ug/L	5.0 U	
Atrazine	ug/L	5.0 U	
Benzaldehyde	ug/L	5.0 U	
Benzo(a)anthracene	ug/L	5.0 U	
Benzo(a)pyrene	ug/L	5.0 U	
Benzo(b)fluoranthene	ug/L	5.0 U	
Benzo(g,h,i)perylene	ug/L	5.0 U	
Benzo(k)fluoranthene	ug/L	5.0 U	
Biphenyl	ug/L	5.0 U	
bis(2-Chloroethoxy)methane	ug/L	5.0 U	
bis(2-Chloroethyl)ether	ug/L	5.0 U	
bis(2-Ethylhexyl)phthalate	ug/L	5.0 U	
4-Bromophenyl-phenylether	ug/L	5.0 U	
Butylbenzylphthalate	ug/L	5.0 U	
Caprolactam	ug/L	5.0 U	
Carbazole	ug/L	5.0 U	
4-Chloro-3-methylphenol	ug/L	5.0 U	
4-Chloroaniline	ug/L	5.0 U	
2-Chloronaphthalene	ug/L	5.0 U	
2-Chlorophenol	ug/L	5.0 U	
4-Chlorophenyl-phenylether	ug/L	5.0 U	
Chrysene	ug/L	5.0 U	
Di-n-butylphthalate	ug/L	5.0 U	
Di-n-octylphthalate	ug/L	5.0 U	
Dibenz(a,h)anthracene	ug/L	5.0 U	
Dibenzofuran	ug/L	5.0 U	

Analysis/ Analyte	Units	214-FB	215-FB
3,3'-Dichlorobenzidine	ug/L	5.0 U	
2,4-Dichlorophenol	ug/L	5.0 U	
Diethylphthalate	ug/L	5.0 U	
2,4-Dimethylphenol	ug/L	5.0 U	
Dimethylphthalate	ug/L	5.0 U	
4,6-Dinitro-2-methylphenol	ug/L	10 U	
2,4-Dinitrophenol	ug/L	10 U	
2,4-Dinitrotoluene	ug/L	5.0 U	
2,6-Dinitrotoluene	ug/L	5.0 U	
Fluoranthene	ug/L	5.0 U	
Fluorene	ug/L	5.0 U	
Hexachlorobenzene	ug/L	5.0 U	
Hexachlorobutadiene	ug/L	5.0 U	
Hexachlorocyclopentadiene	ug/L	5.0 U	
Hexachloroethane	ug/L	5.0 U	
Indeno(1,2,3-cd)pyrene	ug/L	5.0 U	
Isophorone	ug/L	5.0 U	
2-Methylnaphthalene	ug/L	5.0 U	
2-Methylphenol	ug/L	5.0 U	
4-Methylphenol	ug/L	5.0 U	
Naphthalene	ug/L	5.0 U	
2-Nitroaniline	ug/L	10 U	
3-Nitroaniline	ug/L	10 U	
4-Nitroaniline	ug/L	10 U	
Nitrobenzene	ug/L	5.0 U	
2-Nitrophenol	ug/L	5.0 U	
4-Nitrophenol	ug/L	10 U	
N-nitroso-di-n-propylamine	ug/L	5.0 U	
N-nitrosodiphenylamine	ug/L	5.0 U	
Pentachlorophenol	ug/L	10 U	
Phenanthrene	ug/L	5.0 U	
Phenol	ug/L	5.0 U	
Pyrene	ug/L	5.0 U	
1,2,4,5-Tetrachlorobenzene	ug/L	5.0 U	
2,3,4,6-Tetrachlorophenol	ug/L	5.0 U	
2,4,5-Trichlorophenol	ug/L	5.0 U	
2,4,6-Trichlorophenol	ug/L	5.0 U	
1 TPH Semi-volatile in Water by GC/FID			
Extractable TPH	mg/L	2 U	
1 TPH Volatiles in water by GC/MS			
Purgeable TPH	ug/L	40 U	40 U
1 VOCs in Water by GC/MS for Low Detection Limits			
Acetone	ug/L	11	5.0 U
Benzene	ug/L	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U

Analysis/ Analyte	Units	214-FB	215-FB
Bromoform	ug/L	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U
Chloroform	ug/L	1.1	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U

Analysis/ Analyte	Units	214-FB	215-FB
Vinyl Chloride	ug/L	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U

United States Environmental Protection Agency
Region VII
300 Minnesota Avenue
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 6561

Project ID: MBDB788

Project Description: Independent Petrochemical Corp. sampling

From: Mike B. Davis
SUPR/ERSB/PPSS

To: Alisha Claycamp
ENSV/CARB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on _____.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _____, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:_____

United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: 12/11/2014

Subject: Transmittal of Sample Analysis Results for ASR #: 6681

Project ID: MBDB788

Project Description: Independent Petrochemical Corp. sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Mike B. Davis
SUPR/ERSB/PPSS

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Mike B. Davis
Org: SUPR/ERSB/PPSS
Phone: 913-551-7328

Project ID: MBDB788

Project Desc: Independent Petrochemical Corp. sampling

Location: St. Louis
State: Missouri
Program: Superfund

Site Name: Independent Petrochemical Corp. - Site Evaluation/Disposition
Site ID: B788 Site OU: 00
GPRA PRC: 303DC6

Purpose: Site Characterization

Site Reassessment.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

ug/m3 = Micrograms per Cubic Meter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

ASR Number: 6681 Sample Information Summary 12/11/2014

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Air	Loc #5, sub-slab		11/20/2014	07:44	11/20/2014	15:33	11/21/2014
2 -	__	Air	Co-located w/Loc #5, sub-slab		11/20/2014	07:45	11/20/2014	15:35	11/21/2014
3 -	__	Air	Ambient, Outside - South of garage		11/20/2014	07:47	11/20/2014	15:40	11/21/2014
4 -	__	Air	Loc #4, sub-slab		11/20/2014	08:12	11/20/2014	16:04	11/21/2014
5 -	__	Air	Co-located w/Loc #4, Indoor		11/20/2014	08:13	11/20/2014	16:05	11/21/2014
5 -	FD	Air	Co-located w/Loc #4, Indoor		11/20/2014	08:13	11/20/2014	16:06	11/21/2014

Analysis	Comments About Results For This Analysis

1 VOCs in Air at Ambient Levels by GC/MS

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.4G

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 5-FD

Comments:
Dilutions were necessary in order to obtain valid results due to matrix interferences and high analyte concentrations for samples 1 and 4. This increased the reporting limits by a factor of 10 for these samples.

1,2,4-Trichlorobenzene was UJ-coded in samples 1-5 and 5-fd. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	4.7 U	4.8	0.47 U	13
Allyl Chloride	ug/m3	6.6 U	0.66 U	0.66 U	6.6 U
Benzene	ug/m3	12	0.68 U	2.8	6.8 U
Benzyl Chloride	ug/m3	10 U	1.0 U	1.0 U	10 U
Bromodichloromethane	ug/m3	13 U	1.3 U	1.3 U	13 U
Bromoform	ug/m3	22 U	2.2 U	2.2 U	22 U
Bromomethane	ug/m3	8.4 U	0.84 U	0.84 U	8.4 U
1,3-Butadiene	ug/m3	4.5 U	0.45 U	0.45 U	4.5 U
2-Butanone	ug/m3	5.8 U	0.63	0.78	5.8 U
Carbon Disulfide	ug/m3	6.4 U	0.64 U	0.64 U	6.4 U
Carbon Tetrachloride	ug/m3	13 U	1.3 U	1.3 U	13 U
Chlorobenzene	ug/m3	9.9 U	0.99 U	0.99 U	9.9 U
Chloroethane	ug/m3	5.7 U	0.57 U	0.57 U	5.7 U
Chloroform	ug/m3	10 U	1.0 U	1.0 U	16
Chloromethane	ug/m3	4.4 U	1.2	1.2	4.4 U
Cyclohexane	ug/m3	3700	0.74 U	3.4	7.4 U
Dibromochloromethane	ug/m3	18 U	1.8 U	1.8 U	18 U
1,2-Dibromoethane	ug/m3	17 U	1.7 U	1.7 U	17 U
1,2-Dichlorobenzene	ug/m3	13 U	1.3 U	1.3 U	13 U
1,3-Dichlorobenzene	ug/m3	13 U	1.3 U	1.3 U	13 U
1,4-Dichlorobenzene	ug/m3	13 U	1.3 U	1.3 U	13 U
Dichlorodifluoromethane	ug/m3	11 U	2.8	2.8	11 U
1,1-Dichloroethane	ug/m3	110	0.84 U	0.84 U	2400
1,2-Dichloroethane	ug/m3	8.5 U	0.85 U	0.85 U	8.5 U
1,1-Dichloroethene	ug/m3	8.0 U	0.80 U	0.80 U	8.0 U
cis-1,2-Dichloroethene	ug/m3	200	0.84 U	0.84 U	10
trans-1,2-Dichloroethene	ug/m3	13	0.83 U	0.83 U	8.3 U
1,2-Dichloropropane	ug/m3	9.8 U	0.98 U	0.98 U	9.8 U
cis-1,3-Dichloropropene	ug/m3	9.6 U	0.96 U	0.96 U	9.6 U
trans-1,3-Dichloropropene	ug/m3	10 U	1.0 U	1.0 U	10 U
1,2-Dichlorotetrafluoroethane	ug/m3	15 U	1.5 U	1.5 U	15 U
1,4-Dioxane	ug/m3	7.1 U	0.71 U	0.71 U	7.1 U
Ethyl Acetate	ug/m3	11 U	1.1 U	1.1 U	11 U
Ethyl Benzene	ug/m3	9.3 U	0.93 U	2.7	9.3 U
4-Ethyltoluene	ug/m3	11 U	1.1 U	1.1 U	11 U
Heptane	ug/m3	8.9 U	0.89 U	2.8	8.9 U
Hexachlorobutadiene	ug/m3	21 U	2.1 U	2.1 U	21 U
Hexane	ug/m3	72	1.1	9.6	7.6 U
2-Hexanone	ug/m3	53	0.80 U	0.80 U	8.0 U
Methyl tert-butyl ether	ug/m3	7.7 U	0.77 U	0.77 U	7.7 U
Methylene Chloride	ug/m3	7.1 U	0.71 U	2.2	7.1 U
4-Methyl-2-Pentanone	ug/m3	8.1 U	0.81 U	0.81 U	8.1 U
2-Propanol	ug/m3	4.5 U	2.0	7.7	12
Propene	ug/m3	7.2	0.60	0.87	3.8 U
Styrene	ug/m3	9.1 U	0.91 U	0.91 U	9.1 U

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1,1,2,2-Tetrachloroethane	ug/m3	15 U	1.5 U	1.5 U	15 U
Tetrachloroethene	ug/m3	140	6.6	4.3	4100
Tetrahydrofuran	ug/m3	5.7 U	0.57 U	0.57 U	5.7 U
Toluene	ug/m3	8.0 U	1.6	17	8.0 U
1,2,4-Trichlorobenzene	ug/m3	15 UJ	1.5 UJ	1.5 UJ	15 UJ
1,1,1-Trichloroethane	ug/m3	11 U	1.1 U	1.1 U	88
1,1,2-Trichloroethane	ug/m3	12 U	1.2 U	1.2 U	12 U
Trichloroethene	ug/m3	230	1.1 U	1.1 U	580
Trichlorofluoromethane	ug/m3	12 U	1.6	1.6	12 U
1,1,2-Trichlorotrifluoroethane	ug/m3	15 U	1.5 U	1.5 U	15 U
1,2,4-Trimethylbenzene	ug/m3	11 U	1.1 U	3.5	11 U
1,3,5-Trimethylbenzene	ug/m3	10 U	1.0 U	1.1	10 U
2,2,4-Trimethylpentane	ug/m3	3000	1.0 U	8.6	10 U
Vinyl Acetate	ug/m3	7.2 U	0.72 U	2.3	7.2 U
Vinyl Bromide	ug/m3	9.6 U	0.96 U	0.96 U	9.6 U
Vinyl Chloride	ug/m3	69	0.55 U	0.55 U	5.5 U
m and/or p-Xylene	ug/m3	19 U	1.9 U	8.9	19 U
o-Xylene	ug/m3	9.4 U	0.94 U	3.1	9.4 U

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Analysis/ Analyte	Units	5-__	5-FD
1 VOCs in Air at Ambient Levels by GC/MS			
Acetone	ug/m3	13	13
Allyl Chloride	ug/m3	0.66 U	0.66 U
Benzene	ug/m3	0.99	1.0
Benzyl Chloride	ug/m3	1.0 U	1.0 U
Bromodichloromethane	ug/m3	1.3 U	1.3 U
Bromoform	ug/m3	2.2 U	2.2 U
Bromomethane	ug/m3	0.84 U	0.84 U
1,3-Butadiene	ug/m3	0.45 U	0.45 U
2-Butanone	ug/m3	1.0	1.0
Carbon Disulfide	ug/m3	0.64 U	0.64 U
Carbon Tetrachloride	ug/m3	1.3 U	1.3 U
Chlorobenzene	ug/m3	0.99 U	0.99 U
Chloroethane	ug/m3	2.4	2.4
Chloroform	ug/m3	1.0 U	1.0 U
Chloromethane	ug/m3	1.1	1.1
Cyclohexane	ug/m3	1.8	1.8
Dibromochloromethane	ug/m3	1.8 U	1.8 U
1,2-Dibromoethane	ug/m3	1.7 U	1.7 U
1,2-Dichlorobenzene	ug/m3	1.3 U	1.3 U
1,3-Dichlorobenzene	ug/m3	1.3 U	1.3 U
1,4-Dichlorobenzene	ug/m3	1.3 U	1.3 U
Dichlorodifluoromethane	ug/m3	4.2	4.2
1,1-Dichloroethane	ug/m3	17	17
1,2-Dichloroethane	ug/m3	0.85 U	0.85 U
1,1-Dichloroethene	ug/m3	0.80 U	0.80 U
cis-1,2-Dichloroethene	ug/m3	4.0	3.9
trans-1,2-Dichloroethene	ug/m3	0.83 U	0.83 U
1,2-Dichloropropane	ug/m3	0.98 U	0.98 U
cis-1,3-Dichloropropene	ug/m3	0.96 U	0.96 U
trans-1,3-Dichloropropene	ug/m3	1.0 U	1.0 U
1,2-Dichlorotetrafluoroethane	ug/m3	1.5 U	1.5 U
1,4-Dioxane	ug/m3	0.71 U	0.71 U
Ethyl Acetate	ug/m3	1.2	1.2
Ethyl Benzene	ug/m3	0.93 U	0.93 U
4-Ethyltoluene	ug/m3	1.6	1.6
Heptane	ug/m3	3.8	3.6
Hexachlorobutadiene	ug/m3	2.1 U	2.1 U
Hexane	ug/m3	3.0	3.0
2-Hexanone	ug/m3	0.80 U	0.80 U
Methyl tert-butyl ether	ug/m3	0.77 U	0.77 U
Methylene Chloride	ug/m3	1.9	1.8
4-Methyl-2-Pentanone	ug/m3	0.81 U	0.81 U
2-Propanol	ug/m3	15	16
Propene	ug/m3	1.1	1.1
Styrene	ug/m3	0.91 U	0.91 U

Project ID: MBDB788 Project Desc: Independent Petrochemical Corp. sampling

Analysis/ Analyte	Units	5-__	5-FD
1,1,2,2-Tetrachloroethane	ug/m3	1.5 U	1.5 U
Tetrachloroethene	ug/m3	19	19
Tetrahydrofuran	ug/m3	0.57 U	0.57 U
Toluene	ug/m3	7.2	7.2
1,2,4-Trichlorobenzene	ug/m3	1.5 UJ	1.5 UJ
1,1,1-Trichloroethane	ug/m3	1.1 U	1.1 U
1,1,2-Trichloroethane	ug/m3	1.2 U	1.2 U
Trichloroethene	ug/m3	3.2	3.0
Trichlorofluoromethane	ug/m3	1.6	1.6
1,1,2-Trichlorotrifluoroethane	ug/m3	1.5 U	1.5 U
1,2,4-Trimethylbenzene	ug/m3	8.2	8.3
1,3,5-Trimethylbenzene	ug/m3	3.2	3.2
2,2,4-Trimethylpentane	ug/m3	2.0	2.0
Vinyl Acetate	ug/m3	0.72 U	0.79
Vinyl Bromide	ug/m3	0.96 U	0.96 U
Vinyl Chloride	ug/m3	0.96	0.94
m and/or p-Xylene	ug/m3	3.2	3.2
o-Xylene	ug/m3	2.1	2.1

United States Environmental Protection Agency
Region VII
300 Minnesota Avenue
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 6681

Project ID: MBDB788

Project Description: Independent Petrochemical Corp. sampling

From: Mike B. Davis
SUPR/ERSB/PPSS

To: Alisha Claycamp
ENSV/CARB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on _____.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _____, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:_____

APPENDIX F

ANALYTICAL SUMMARY TABLES

SVOCs in Soil Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	Naphthalene	2-Methylnaphthalene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Acenaphthene	Acenaphthylene	Acetophenone	Biphenyl	bis(2-Ethylhexyl)phthalate	Carbazole	Dibenzofuran	Pentachlorophenol
				Concentration (micrograms per kilogram)																						
SO-1, 0-3	6561-101	08/18/2014	15:45	300	530	310	3,000	2,600	6,400	7,700 J	**5,200**	6,300	**14,000**	**10,000**	**9,100**	**9,400**	**3,900**	11,000	320 J	2,900	190 U	190 U	440	490	320	370 U
SO-1, 4-8	6561-102	08/18/2014	16:00	250	850	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	430 U
SO-1, 8-10.5	6561-103	08/18/2014	16:10	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	410 U
SO-1, 12-16	6561-104	08/18/2014	16:30	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	420 U
SO-2, 0-3	6561-105	08/19/2014	10:00	960	1,000	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	420 U
SO-2, 4-8	6561-106	08/19/2014	10:25	620	4,300	340	680	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	260	220 U	290	430 U
SO-2, 8-10.5	6561-107	08/19/2014	10:35	380	880	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	440 U
SO-3, 0-3.5	6561-108	08/19/2014	13:10	170 U	170 U	170 U	460	170 U	830	690	**450**	410	440	260	**340**	**220**	170 U	260	170 U	170 U	170 U	170 U	330	170 U	170 U	340 U
SO-3, 4-7	6561-109	08/19/2014	13:15	180 U	510	180 U	270	180 U	290	260	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	230	180 U	180 U	360 U
SO-3, 8-12	6561-110	08/19/2014	13:20	210	900	200 U	350	200 U	270	260	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	450	200 U	200 U	380 U
SO-4, 0-3	6561-111	08/19/2014	14:40	180 U	180 U	180 U	180 U	180 U	220	190	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	340 U
SO-4, 4-7.5	6561-112	08/19/2014	15:00	170 U	170 U	170 U	180	170 U	200	170	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	330 U
SO-3, 12-16	6561-113	08/19/2014	13:25	2,500	7,700	620	1,500	210 U	210 U	240	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	**11,000**	210 U	210 U	410 U
SO-4, 8-12	6561-114	08/19/2014	15:15	190 U	330	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	570	190 U	190 U	360 U
SO-4, 12-16	6561-115-FD	08/19/2014	15:30	200 U	200 U	200 U	320	200 U	510	460	**290**	300	310	240	**260**	200 U	200 U	200 U	200 U	200 U	200 U	200 U	350	200 U	200 U	400 U
SO-4, 12-16	6561-115	08/19/2014	15:30	200 U	200 U	200 U	300	200 U	460	450	**280**	270	300	230	**230**	200 U	200 U	200 U	200 U	200 U	200 U	200 U	360	200 U	200 U	400 U
SO-5, 0-4	6561-116	08/20/2014	09:10	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	350 U
SO-5, 4-8	6561-117	08/20/2014	09:20	1,500	2,400	470	1,600	310	1,400	1,400	**560**	620	430	390	**360**	210 U	210 U	210 U	330	210 U	210 U	210 U	270	210 U	220	410 U
SO-5, 8-12	6561-118	08/20/2014	09:40	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	410 U
SO-5, 12-16	6561-119-FD	08/20/2014	09:55	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	420 U
SO-5, 12-16	6561-119	08/20/2014	09:55	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	220 U	420 U
SO-6, 0-1.5	6561-120	08/20/2014	14:50	960 U	9,700	960 U	10,000	1,200	5,200	3,600	**2,100**	2,600	2,800	1,000	**1,700**	**980**	960 U	1,200	960 U	960 U	960 U	960 U	2,500	960 U	960 U	1900 U
SO-6, 8-12	6561-121	08/20/2014	15:10	240 U	940	240 U	960	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	240 U	260	240 U	240 U	**8,000**
SO-6, 12-16	6561-122	08/20/2014	15:25	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	**2,300**
SO-7, 0-4	6561-123	08/20/2014	15:50	230 U	43,000	1,000	5,000	960	11,000	11,000	**7,900**	9,800	**11,000**	**3,900 J**	**9,600**	**5,200**	**2,300**	6,800	1,100	230 U	760 J	370	8,800	230 U	230 U	450 U
SO-7, 4-8	6561-124	08/20/2014	16:00	200 U	14,000	200 U	1,100	200 U	310	340	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	470	200 U	200 U	400 U
SO-7, 8-12	6561-125	08/20/2014	16:30	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	420 U
SO-7, 12-16	6561-126	08/20/2014	16:45	210 U	260	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	410 U
SO-8, 4-8	6561-127	08/21/2014	08:55	570	3,400	450	2,000	250	430 J	900 J	360 J	420 J	230 U	230 U	230 U	230 U	230 U	230 U	450	230 U	230 U	230 U	1,400	230 U	380	450 U
SO-8, 8-11.5	6561-128	08/21/2014	10:00	280	1,100	230 U	870	230 U	230 U	410	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	230 U	690	230 U	230 U	450 U
SCDM Reference Dose Screening Concentration				1,000,000	300,000	3,000,000	NE	20,000,000	3,000,000	2,000,000	NE	NE	NE	NE	NE	NE	NE	NE	4,000,000	NE	NE	NE	1,000,000	NE	70,000	300,000
SCDM Cancer Risk Screening Concentration				NE	NE	NE	NE	NE	NE	NE	200	20,000	NE	2,000	20	200	20	NE	NE	NE	NE	NE	10,000	30,000	NE	1,000
EPA Regional Screening Level (Industrial Soil) HQ= 0.1				17,000	300,000	3,000,000	NE	23,000,000	3,000,000	2,300,000	2,900	290,000	2,900	29,000	290	2,900	290	NE	4,500,000	NE	########	NE	160,000	NE	NE	4,000

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
NE	Not established
SCDM	Superfund Chemical Data Matrix
U	The analyte was not detected at or above the reporting limit

Metals in Soil Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium
				Concentration (milligrams per kilogram)					
SO-1, 0-3	6561-101	08/18/2014	15:45	**27.4 J**	143	2.2 J	15.7	248	4.7
SO-1, 4-8	6561-102	08/18/2014	16:00	**8.8**	186	0.67	14.8	56.5	3.3 U
SO-1, 8-10.5	6561-103	08/18/2014	16:10	**14.9**	199	0.75	19.9	21.9	3.8
SO-1, 12-16	6561-104	08/18/2014	16:30	**8.8**	169	0.74	15.0	12.9	3.3 U
SO-2, 0-3	6561-105	08/19/2014	10:00	**5.4**	134	0.87	16.1	63.3	3.2 U
SO-2, 4-8	6561-106	08/19/2014	10:25	**4.5**	190	0.46 U	13.1	13.7	3.2 U
SO-2, 8-10.5	6561-107	08/19/2014	10:35	**11.5**	171	0.74	18.2	24.0	3.4 U
SO-3, 0-3.5	6561-108	08/19/2014	13:10	**2.6**	44.4	0.88	6.8	28.1	2.6 U
SO-3, 4-7	6561-109	08/19/2014	13:15	**2.7**	35.0	0.44 U	8.2	12.3	3.1 U
SO-3, 8-12	6561-110	08/19/2014	13:20	**14.9**	113	1.1	12.0	27.7	3.0 U
SO-4, 0-3	6561-111	08/19/2014	14:40	**3.8**	42.5	0.41 U	4.3	21.2	2.9 U
SO-4, 4-7.5	6561-112	08/19/2014	15:00	**3.7**	55.5	0.44 U	6.3	22.1	3.1 U
SO-3, 12-16	6561-113	08/19/2014	13:25	**7.5**	189	0.85	19.4	42.2	3.8 U
SO-4, 8-12	6561-114	08/19/2014	15:15	**2.6**	21.6	0.40 U	5.5	7.3	2.8 U
SO-4, 12-16	6561-115-FD	08/19/2014	15:30	**6.8**	86.8	0.47 U	11.7	15.8	3.3 U
SO-4, 12-16	6561-115	08/19/2014	15:30	**5.7**	62.4	0.43 U	9.4	14.4	3.0 U
SO-5, 0-4	6561-116	08/20/2014	09:10	**6.5**	45.0	0.69	9.3	11.6	3.5 U
SO-5, 4-8	6561-117	08/20/2014	09:20	**8.3**	189	0.98	14.1	101	3.7 U
SO-5, 8-12	6561-118	08/20/2014	09:40	**5.4**	199	0.49 U	13.6	14.3	3.4 U
SO-5, 12-16	6561-119-FD	08/20/2014	09:55	**7.9**	247	0.51 U	23.5	13.3	3.7
SO-5, 12-16	6561-119	08/20/2014	09:55	**6.8**	201	0.68	15.6	12.4	3.8 U
SO-6, 0-1.5	6561-120	08/20/2014	14:50	**28.9**	32.3	0.58	9.1	26.4	3.1 U
SO-6, 8-12	6561-121	08/20/2014	15:10	**7.3**	113	0.46 U	11.6	8.6	3.2 U
SO-6, 12-16	6561-122	08/20/2014	15:25	**16.3**	189	0.67	21.5	19.1	4.5
SO-7, 0-4	6561-123	08/20/2014	15:50	**10.3**	165	1.5	16.3	262	5.7
SO-7, 4-8	6561-124	08/20/2014	16:00	**8.0**	113	0.48 U	14.5	14.3	3.3 U
SO-7, 8-12	6561-125	08/20/2014	16:30	**11.8**	170	0.63	16.4	16.0	3.7
SO-7, 12-16	6561-126	08/20/2014	16:45	**6.6**	148	0.56	16.2	10.9	3.0 U
SO-8, 4-8	6561-127	08/21/2014	08:55	**7.2**	123	0.66	15.7	11.8	3.2 U
SO-8, 8-11.5	6561-128	08/21/2014	10:00	**7.2**	153	0.87 J	16.3	21.1	3.4 U
SCDM Reference Dose Screening Concentration				23	5,500	39	230	NE	390
SCDM Cancer Risk Screening Concentration				0.43	NE	NE	NE	NE	NE
EPA Regional Screening Level (Industrial Soil) HQ=0.1				3	22,000,000	98	NE	800	580

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
NE	Not established
SCDM	Superfund Chemical Data Matrix
U	The analyte was not detected at or above the reporting limit

VOCs in Soil Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	1,1,2,2-Tetrachloroethane	1,1-Dichloroethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	4-Methyl-2-Pentanone	Acetone	Benzene	Chlorobenzene	cis-1,2-Dichloroethene	Cyclohexane	Ethyl Benzene	Isopropylbenzene	m and/or p-Xylene	Methyl Acetate	Methylcyclohexane	Methylene Chloride	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	Vinyl Chloride
				Concentration (micrograms per kilogram)																						
SO-1, 0-3	6561-101	08/18/2014	15:45	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	13 U	6.6 U	13 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	13 U	6.6 U	7.8	6.6 U	13 U	6.6 U	11	7.7	6.6 U
SO-1, 4-8	6561-102	08/18/2014	16:00	310 U	310 U	310 U	310 U	310 U	620 U	310 U	620 U	310 U	310 U	310 U	4,700	310 U	2,800	620 U	310 U	47,000	3,200	630	310 U	310 U	310 U	310 U
SO-1, 8-10.5	6561-103	08/18/2014	16:10	310 U	310 U	310 U	310 U	310 U	620 U	310 U	620 U	310 U	310 U	310 U	310 U	310 U	310 U	620 U	310 U	1,300	3,200	620 U	310 U	310 U	310 U	310 U
SO-1, 12-16	6561-104	08/18/2014	16:30	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	11 U	5.6 U	74	5.6 U	5.6 U	5.6 U	60	5.6 U	30	11 U	5.6 U	2,600	5.6 U	11 U	5.6 U	5.6 U	5.6 U	5.6 U
SO-2, 0-3	6561-105	08/19/2014	10:00	**6,100**	1,400 U	5,700	1,400 U	1,400 U	2,900 U	1,400 U	2,900 U	1,400 U	1,400 U	1,400 U	2,200	19,000	8,400	37,000	1,400 U	50,000	2,300	**40,000**	2,600	1,400 U	1,400 U	1,400 U
SO-2, 4-8	6561-106	08/19/2014	10:25	320 U	320 U	320 U	320 U	320 U	650 U	320 U	650 U	1,200	320 U	320 U	11,000	810	3,000	650	320 U	47,000	3,100	650 U	320 U	320 U	320 U	320 U
SO-2, 8-10.5	6561-107	08/19/2014	10:35	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	13 U	6.4 U	13 U	450	10	6.4 U	16,000	35	110	41	6.4 U	68,000	6.4 U	22	6.4 U	6.4 U	6.4 U	6.4 U
SO-3, 0-3.5	6561-108	08/19/2014	13:10	6.0 U	6.0 U	11	6.0 U	15	12 U	6.0 U	170	9.4	780	6.0 U	6.0 U	6.0 U	23	12 U	6.0 U	22	6.0 U	12 U	6.0 U	6.0 U	6.0 U	6.0 U
SO-3, 4-7	6561-109	08/19/2014	13:15	9.9	5.2 U	130	5.2 U	94	10 U	36	10 UJ	190	600	7.3	51	110	120	360	5.2 U	230	5.2 U	100	5.2 U	5.2 U	67	5.2 U
SO-3, 8-12	6561-110	08/19/2014	13:20	29 U	29 U	470	55	820	58 U	29 U	58 UJ	720	9,500	29 U	720	3,800	880	4,400	29 U	2,300	29 U	1,100	580	29 U	81	29 U
SO-4, 0-3	6561-111	08/19/2014	14:40	5.6 U	5.6 U	24	5.6 U	8.0	11 U	11 U	240 J	18	190	5.6 U	18	58	8.2	190	13	85	5.6 U	11 U	52	6.2	53	5.6 U
SO-4, 4-7.5	6561-112	08/19/2014	15:00	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	7.1 U	3.5 U	44 J	3.5 U	3.8	3.5 U	3.5 U	3.5 U	3.5 U	7.1 U	3.5 U	3.5 U	3.5 U	7.1 U	3.5 U	3.5 U	3.5 U	3.5 U
SO-3, 12-16	6561-113	08/19/2014	13:25	41	30 U	590	38	550	59 U	30 U	59 UJ	490	8,200	35	560	3,400	770	5,900	30 U	2,000	30 U	960	1,600	30 U	300	33
SO-4, 8-12	6561-114	08/19/2014	15:15	4.4 U	4.4 U	4.6	4.4 U	4.4 U	8.8 U	4.4 U	52 J	10	110	4.4 U	7.4	13	12	46	4.4 U	52	4.4 U	8.8 U	8.6	4.4 U	11	4.4 U
SO-4, 12-16	6561-115-FD	08/19/2014	15:30	28 U	28 U	54	28 U	28 U	56 U	28 U	56 UJ	28 U	110	28 U	49	360	64	1,600	28 U	400	28 U	56 U	340	28 U	250	28 U
SO-4, 12-16	6561-115	08/19/2014	15:30	24 U	24 U	72	24 U	24 U	47 U	24 U	47 UJ	24 U	150	24 U	58	420	69	1,800	24 U	500	24 U	53	410	24 U	320	24 U
SO-5, 0-4	6561-116	08/20/2014	09:10	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	62 J	5.9 U	280 J	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	12 U	5.9 U	9.3 J	5.9 U	12 U	5.9 U	5.9 U	7.0 J	5.9 U
SO-5, 4-8	6561-117	08/20/2014	09:20	9.0	6.8 U	8.0	6.8 U	6.8 U	14 U	6.8 U	93 J	180	6.8 U	6.8 U	41	23	270	21	6.8 U	290	6.8 U	79	6.8 U	6.8 U	9.4	6.8 U
SO-5, 8-12	6561-118	08/20/2014	09:40	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	11 U	5.6 U	44	19	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	11 U	5.6 U	13	5.6 U	11 U	5.6 U	5.6 U	5.6 U	5.6 U
SO-5, 12-16	6561-119-FD	08/20/2014	09:55	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	10	4.7 U	86	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	9.3 U	4.7 U	4.7 U	4.7 U	9.3 U	4.7 U	4.7 U	4.7 U	4.7 U
SO-5, 12-16	6561-119	08/20/2014	09:55	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	12	4.9 U	97	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	9.9 U	4.9 U	4.9 U	4.9 U	9.9 U	4.9 U	4.9 U	4.9 U	4.9 U
SO-6, 0-1.5	6561-120	08/20/2014	14:50	560 U	560 U	560 U	560 U	560 U	1,100 U	560 U	1,100 UJ	560 U	560 U	560 U	1,600	560 U	560 U	4,500	560 U	9,600	2,600	2,000	2,300	560 U	560 U	560 U
SO-6, 8-12	6561-121	08/20/2014	15:10	28	48	12	6.9 U	6.9 U	14 U	6.9 U	14 U	63	6.9 U	560 J	250	190	42	820	6.9 U	870	18	60	120	6.9 U	710	45
SO-6, 12-16	6561-122	08/20/2014	15:25	310 U	310 U	310 U	310 U	310 U	620 U	310 U	620 U	310 U	310 U	310 U	1,700	930	310 U	4,000	310 U	6,500	3,100	920	1,100	310 U	2,500	310 U
SO-7, 0-4	6561-123	08/20/2014	15:50	630 U	630 U	630 U	630 U	630 U	1,300 U	630 U	1,300 UJ	2,300	630 U	630 U	1,700	640	4,300	1,300 U	630 U	10,000	2,600	1,700	630 U	630 U	630 U	630 U
SO-7, 4-8	6561-124	08/20/2014	16:00	300 U	300 U	300 U	300 U	300 U	610 U	300 U	610 U	1,300	300 U	300 U	1,700	410	2,100	610 U	300 U	7,200	3,000	770	300 U	300 U	300 U	300 U
SO-7, 8-12	6561-125	08/20/2014	16:30	29 U	29 U	29 U	29 U	29 U	58 U	29 U	58 U	270	29 U	29 U	750	110	600	58 U	29 U	2,100	29 U	88	29 U	29 U	29 U	29 U
SO-7, 12-16	6561-126	08/20/2014	16:45	30 U	30 U	30 U	30 U	30 U	59 U	30 U	59 U	400 J	30 U	30 U	320 J	70 J	280 J	59 U	30 U	960 J	30 U	59 U	30 U	30 U	30 U	30 U
SO-8, 4-8	6561-127	08/21/2014	08:55	170 U	170 U	340	170 U	170 U	350 U	170 U	350 UJ	630	170 U	170 U	1,400	640	4,900	350 U	170 U	5,500	1,500	760	170 U	170 U	490	170 U
SO-8, 8-11.5	6561-128	08/21/2014	10:00	340 U	340 U	360	340 U	340 U	680 U	340 U	680 U	620	340 U	340 U	1,300	490	5,800	680 U	340 U	5,700	3,400	710	340 U	340 U	430	340 U
SCDM Reference Dose Screening Concentration				1,000,000	10,000,000	NE	NE	5,000,000	40,000,000	6,000,000	70,000,000	300,000	1,000,000	100,000	NE	7,000,000	7,000,000	10,000,000	NE	NE	400,000	NE	10,000,000	400,000	6,000,000	200,000
SCDM Cancer Risk Screening Concentration				3,000	110,000	NE	NE	110,000	NE	NE	NE	11,000	NE	NE	NE	58,000	NE	NE	NE	NE	70,000	NE	NE	300,000	NE	930,000
EPA Regional Screening Level (Industrial Soil), HQ=0.1				2,700	16,000	930,000	NE	11,000	19,000,000	5,600,000	67,000,000	5,100	130,000	230,000	2,700,000	25,000	990,000	240,000	120,000,000	NE	320,000	17,000	280,000	39,000	4,700,000	1,700

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
NE	Not established
SCDM	Superfund Chemical Data Matrix
U	The analyte was not detected at or above the reporting limit

TPH in Soil Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	Extractable TPH (TPH-DRO)	Purgeable TPH (TPH-GRO)
				mg/kg	µg/kg
SO-1, 0-3	6561-101	08/18/2014	15:45	1,850	18,900
SO-1, 4-8	6561-102	08/18/2014	16:00	1,640	**1,210,000**
SO-1, 8-10.5	6561-103	08/18/2014	16:10	85.7 U	2,560 U
SO-1, 12-16	6561-104	08/18/2014	16:30	86.6 U	255,000
SO-2, 0-3	6561-105	08/19/2014	10:00	2,090	**3,650,000**
SO-2, 4-8	6561-106	08/19/2014	10:25	578	**1,420,000**
SO-2, 8-10.5	6561-107	08/19/2014	10:35	401	**1,090,000**
SO-3, 0-3.5	6561-108	08/19/2014	13:10	110	17,600
SO-3, 4-7	6561-109	08/19/2014	13:15	166	45,600
SO-3, 8-12	6561-110	08/19/2014	13:20	2,270 J	352,000
SO-4, 0-3	6561-111	08/19/2014	14:40	67.8 U	2,040 U
SO-4, 4-7.5	6561-112	08/19/2014	15:00	356	177,000
SO-3, 12-16	6561-113	08/19/2014	13:25	3,010	275,000
SO-4, 8-12	6561-114	08/19/2014	15:15	234	3,320
SO-4, 12-16	6561-115-FD	08/19/2014	15:30	167	53,100
SO-4, 12-16	6561-115	08/19/2014	15:30	307	52,300
SO-5, 0-4	6561-116	08/20/2014	09:10	70.8 U	2,130 U
SO-5, 4-8	6561-117	08/20/2014	09:20	472	242,000
SO-5, 8-12	6561-118	08/20/2014	09:40	74.9 U	2,240 U
SO-5, 12-16	6561-119-FD	08/20/2014	09:55	86.2 U	2,550 U
SO-5, 12-16	6561-119	08/20/2014	09:55	85 U	2,510 U
SO-6, 0-1.5	6561-120	08/20/2014	14:50	**17,300**	370,000
SO-6, 8-12	6561-121	08/20/2014	15:10	322	35,000
SO-6, 12-16	6561-122	08/20/2014	15:25	3,170	205,000
SO-7, 0-4	6561-123	08/20/2014	15:50	2,890	**492,000**
SO-7, 4-8	6561-124	08/20/2014	16:00	3,280	**481,000**
SO-7, 8-12	6561-125	08/20/2014	16:30	85.4 U	2,540 U
SO-7, 12-16	6561-126	08/20/2014	16:45	287 J	**623,000**
SO-8, 4-8	6561-127	08/21/2014	08:55	2,220	382,000
SO-8, 8-11.5	6561-128	08/21/2014	10:00	260 J	260,000
MRBCA LDTL				4,150	385,000

Notes:

BOLD results exceed a MRBCA LDTL concentration

DRO	Diesel range organics
FD	Field duplicate
GRO	Gasoline range organics
ID	Identification
J	The reported value is an estimate
LDTL	Lowest Default Target Level
mg/kg	Milligrams per kilogram
MRBCA	Missouri Risk Based Corrective Action
TPH	Total petroleum hydrocarbons
U	The analyte was not detected at or above the reporting limit
µg/kg	Micrograms per kilogram

SVOCs in Groundwater and Sump Water Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	Naphthalene	2-Methylnaphthalene	Phenanthrene	2,3,4,6-Tetrachlorophenol	2,4-Dimethylphenol	2-Chlorophenol	4-Methylphenol	Phenol
				Concentration (micrograms per liter)							
GW-1-36	6561-201	08/19/2014	08:45	5.0 U	**76**	6.1	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
GW-2-12	6561-202	08/19/2014	11:10	**9.5**	**20**	5.0 U	5.0 U	5.0 U	6.1	5.0 U	5.0 U
GW-4-9	6561-204-FD	08/19/2014	17:30	**44**	**88**	10 U	10 U	11	10 U	10 U	43
GW-4-9	6561-204	08/19/2014	17:30	**8.4**	**22**	5.0 U	5.0 U	5.0 U	8.8	5.0 U	5.0 U
GW-6-16	6561-205	08/20/2014	17:30	**120**	**160**	69	**110**	25 U	25 U	30	25 U
SW-1	6561-206	08/21/2014	10:15	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
GW-8-12	6561-207	08/21/2014	11:30	5.0 U	**31**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Field Blank	6561-214-FB	08/21/2014	09:30	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Maximum Contaminant Level				NE	NE	NE	NE	NE	NE	NE	NE
SCDM Reference Dose Screening Concentration				300	60	NE	NE	300	NE	1,000	4,000
SCDM Cancer Risk Screening Concentration				NE	NE	NE	NE	NE	NE	NE	NE
EPA Regional Screening Level (tap water), HQ=0.1				0.17	3.6	NE	24	36	9.1	190	580

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
GW	Groundwater
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
NE	Not established
SCDM	Superfund Chemical Data Matrix
SW	Sump water
U	The analyte was not detected at or above the reporting limit

Metals in Groundwater and Sump Water Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Total or Dissolved	Sample Date	Sample Time	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver
					Concentration (micrograms per liter)						
GW-1-36	6561-201	Total	08/19/2014	08:45	**23.9**	**3,110**	**2.3**	**103**	**369**	10.0 U	1.0 U
GW-2-12	6561-202	Total	08/19/2014	11:10	**133**	**1,170**	1.0 U	**40.3**	**369**	5.0 U	1.0 U
		Dissolved			**88.1**	**674**	1.0 U	2.0 U	1.7	5.0 U	1.0 U
GW-4-9	6561-204-FD	Total	08/19/2014	17:30	**83.3**	**814**	1.0 U	2.0 U	2.1	5.0 U	1.0 U
		Dissolved			**87.4**	**833**	1.0 U	2.0 U	1.0 U	5.0 U	1.0 U
GW-4-9	6561-204	Total	08/19/2014	17:30	**84.1**	**835**	1.0 U	2.2	2.2	5.0 U	1.0 U
		Dissolved			**88.1**	**849**	1.0 U	2.0 U	1.0 U	5.0 U	1.0 U
GW-6-16	6561-205	Total	08/20/2014	17:30	**119**	226	1.0 U	9.1	**29.0**	5.0 U	1.0 U
		Dissolved			**141**	272	1.0 U	3.1	5.7	5.0 U	1.0 U
SW-1	6561-206	Total	08/21/2014	10:15	**10.1**	109	1.0 U	2.0 U	1.0	5.0 U	1.0 U
		Dissolved			**9.2**	100	1.0 U	2.0 U	1.0 U	5.0 U	1.0 U
GW-8-12	6561-207	Total	08/21/2014	11:30	**86.5 J**	**5,600**	**81.4**	**204 J**	**8,840**	**31.7 J**	1.0 U
		Dissolved			**4.7**	**396**	1.0 U	2.0 U	1.0 U	5.0 U	7.4
Field Blank	6561-214-FB	Total	08/21/2014	09:30	1.0 U	10.0 U	1.0 U	2.0 U	1.0 U	5.0 U	1.0 U
		Dissolved			1.0 U	10.0 U	1.0 U	2.0 U	1.0 U	5.0 U	1.0 U
Maximum Contaminant Level					10	3,000	5.0	100	15	50	NE
SCDM Reference Dose Screening Concentration					4.0	2,000	7.0	40	NE	70	70
SCDM Cancer Risk Screening Concentration					0.044	NE	NE	NE	NE	NE	NE
EPA Regional Screening Level (tap water), HQ=0.1					0.052	380	0.92	NE	NE	10	9.4

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
GW	Groundwater
HQ	Hazard quotient
ID	Identification
J	The reported value is an estimate
NE	Not established
SCDM	Superfund Chemical Data Matrix
SW	Sump water
U	The analyte was not detected at or above the reporting limit

VOCs in Groundwater and Sump Water Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	Acetone	Benzene	Chlorobenzene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	Cyclohexane	Ethyl Benzene	Isopropylbenzene	m and/or p-Xylene	Methylcyclohexane	Methylene Chloride	Naphthalene	o-Xylene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride
				Concentration (micrograms per liter)																								
GW-1-36	6561-201	08/19/2014	08:45	**3.5**	**3.2**	1.0 U	1.0 U	1.0 U	13	51 J	**1.6**	1.0 U	1.0 U	1.0 U	**56 J**	1.2	1.0 U	1.1	2.0 U	14	1.0 U	2.0 U	1.0 U	**8.4**	1.0 U	1.0 U	**18**	**13**
GW-2-12	6561-202	08/19/2014	11:10	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	N/A O	N/A O	**820 J**	**20 J**	2.4 J	1.0 UJ	1.0 UJ	230 J	**150**	**140 J**	**98**	190	1.0 UJ	**120** J	14	1.0 U	14 J	1.0 UJ	1.0 UJ	1.0 UJ
GW-4-9	6561-204-FD	08/19/2014	17:30	1.0 U	1.0 U	25	1.5	**14**	5.0 U	5.0 U	**390**	**2,600**	1.0 U	1.0 U	**12**	33	**280**	**51**	**2,100**	45	1.0 U	**24**	**280**	1.0 U	**950**	1.0 U	1.0 U	**1.7**
GW-4-9	6561-204	08/19/2014	17:30	1.0 U	1.0 U	26	1.5	**14**	5.0 U	5.0 U	**310**	**2,300**	1.0 U	1.0 U	**12**	32	**320**	36	**1,900**	38	1.0 U	**24**	**330**	1.0 U	**910**	1.0 U	1.0 U	**1.9**
GW-6-16	6561-205	08/20/2014	17:30	**9.1**	1.0 U	18	1.0 U	1.0 U	5.0 U	5.0 U	**18**	7.2	1.0 U	1.0 U	**140 J**	56	**64**	15	**320**	91	3.2	**57** J	**73**	1.0 U	**210**	2.8	1.0 U	**6.2**
SW-1	6561-206	08/21/2014	10:15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	8.4	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	**4.5**	1.0 U	1.0 U	3.0	1.0 U	1.0 U	1.0 U
GW-8-12	6561-207	08/21/2014	11:30	1.0 U	1.0 U	7.5	1.0 U	1.0 U	5.0 U	5.0 U	**220**	4.5	1.0 U	1.0 U	2.7	28	**19**	**140**	2.0 U	33	1.0 U	**3.8**	1.5	1.0 U	3.4	1.2	1.0 U	**1.8**
Field Blank	6561-214-FB	08/21/2014	09:30	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	11	1.0 U	1.0 U	1.0 U	**1.1**	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trip blank	6561-215-FB	08/19/2014	18:00	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Maximum Contaminant Level				NE	7	NE	NE	75	NE	NE	5	100	NE	NE	70	NE	70	NE	NE	NE	5	NE	NE	5	1,000	100	5	2
SCDM Reference Dose Screening Concentration				3,000	700	NE	NE	1,000	9,000	10,000	60	300	NE	100	30	NE	1,000	1,000	3,000	NE	90	300	3,000	90	1,000	300	70	40
SCDM Cancer Risk Screening Concentration				11	NE	NE	NE	12	NE	NE	1.2	NE	NE	2.1	NE	NE	6.1	NE	NE	NE	10	NE	NE	320	NE	NE	1	0.017
EPA Regional Screening Level (tap water), HQ=0.1				2.7	2.8	30	NE	0.48	560	1,400	0.45	7.8	2,100	0.22	3.6	1,300	1.5	45	19	NE	11	0.17	19	4.1	110	36	0.28	0.019

Notes:

BOLD results exceed a SCDM benchmark or Regional Screening Level concentration

EPA	U.S. Environmental Protection agency
FD	Field duplicate
GW	Groundwater
HQ	Hazard quotient
ID	Identification
J	The identification of the analyte is acceptable; the reported value is an estimate
NA	Not analyzed
NE	Not established
SCDM	Superfund Chemical Data Matrix
SW	Sump water
U	The analyte was not detected at or above the reporting limit
UJ	The analyte was not detected at or above the reporting limit; the reporting limit is an estimate

TPH in Groundwater and Sump Water Samples
Independent Petrochemical Corporation Site
St. Louis, Missouri

Sample Location ID	Sample Number	Sample Date	Sample Time	Extractable TPH (TPH-DRO)	Purgeable TPH (TPH-GRO)
				mg/L	µg/L
GW-1-36	6561-201	08/19/2014	08:45	21.7	NA
GW-2-12	6561-202	08/19/2014	11:10	4.17	**29,900**
GW-4-9	6561-204	08/19/2014	17:30	2 U	**22,300**
GW-4-9	6561-204-FD	08/19/2014	17:30	2 U	**24,200**
GW-6-16	6561-205	08/20/2014	17:30	**99.7**	5,890
SW-1	6561-206	08/21/2014	10:15	2 U	40 U
GW-8-12	6561-207	08/21/2014	11:30	2.69	3,190
Field Blank	6561-214-FB	08/21/2014	09:30	2 U	40 U
MRBCA LDTL				34.3	18,100

Notes:

BOLD results exceed a MRBCA LDTL concentration

EPA	U.S. Environmental Protection Agency
FD	Field duplicate
GW	Groundwater
ID	Identification
LDTL	Lowest Default Target Level
MRBCA	Missouri Risk-Based Corrective Action
NA	Not analyzed
SW	Sump water
TPH	Total petroleum hydrocarbons
U	The analyte was not detected at or above the reporting limit
mg/L	Milligrams per liter
µg/L	Micrograms per liter

APPENDIX G

HEALTH ASSESSMENT MEMO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

JAN 21 2015

MEMORANDUM

SUBJECT: Vapor Intrusion Sampling Results at Former Independent Petroleum Company Site, St. Louis, MO

FROM: Greg McCabe
Human Health Risk Assessor
ENST/EDAB

Dan Nicoski
Hydrogeologist
ENST/EDAB

TO: Mike B. Davis
On-Scene Coordinator
SUPR/ERSB

We have completed our review of the results of the November 11, 2014, vapor intrusion sampling effort at the former Independent Petroleum Company site located in St. Louis, MO. Subslab and indoor air samples were taken from one location in both the current bar (location #4) and warehouse (location #5). An ambient air sample was also collected. Because both of these locations are commercial/industrial properties, we compared the sample results with EPA's Regional Screening Levels for industrial air. These health-based screening levels can be found at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/master_sl_table_run_NOV2014.pdf. Sample results were also evaluated using the U.S. Environmental Protection Agency Region 7 Vapor Intrusion Decision Matrix.

The EPA Region 7 Vapor Intrusion Decision Matrix generally recommends that action be considered when indoor air risks exceed 1E-05 for carcinogenic health effects, and/or a Hazard Index equal to 1 for non-carcinogenic health effects. Based on our evaluation of the recent indoor air data, neither a potential excess cancer risk of 1E-05, nor a Hazard Index of 1, was exceeded, either by individual compounds or the cumulative risks from multiple compounds. Therefore, no immediate action is recommended. However, it does appear that the vapor intrusion pathway may be complete. This is evidenced by the presence of high concentrations of PCE and TCE in subslab samples, and lower concentrations of those same contaminants in the co-located indoor air samples, especially at location 4. The information that we were provided made no mention of the completion of a building survey to identify potential indoor air sources of contaminants prior to sampling. Our review assumes that such a survey was completed, and no potential indoor air sources of contamination were identified. We would also note here that a low concentration of PCE was detected in the ambient air sample, which could potentially have contributed to the indoor air concentrations of PCE.

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The data also shows that the subslab concentrations of contaminants in this latest round of sampling are much lower than the subslab concentrations reported during the August, 2014 sampling event. This is an indication of the spatial and temporal variability commonly found in soil gas samples. Because of this variability, and because it appears that there may be a complete vapor intrusion pathway at the site, we are recommending that the Superfund program consider undertaking additional subslab and indoor air sampling at the site once each quarter for the next three quarters. This would allow us to determine if, in fact, the vapor intrusion pathway is complete, and whether health-based screening levels might be exceeded under different weather conditions throughout the year.

Please contact Greg at x7709, or Dan at x7230, if you have any questions regarding our review.